

The Global Effects of Fund-Supported Adjustment Programs

By Morris Goldstein



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The following symbols have been used throughout this paper:

- ... to indicate that data are not available;
- to indicate that the figure is zero or less than half the final digit shown, or that the item does not exist;
- between years or months (e.g., 1979–81 or January–June) to indicate the years or months covered, including the beginning and ending years or months;
- / between years (e.g., 1980/81) to indicate a crop or fiscal (financial) year.

“Billion” means a thousand million.

Minor discrepancies between constituent figures and totals are due to rounding.

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Prefatory Note

This is the second of a group of papers dealing with various aspects of Fund-supported adjustment programs. The other two, *Fund-Supported Adjustment Programs and Economic Growth* by Mohsin S. Khan and Malcolm D. Knight of the Fund's Research Department, and *Fund-Supported Programs, Fiscal Policy, and Income Distribution* by the Fiscal Affairs Department, are also being published in the Fund's Occasional Paper Series. The three papers were the basis for a discussion at a seminar held in the Fund's Executive Board in July 1985, and the published versions reflect the comments and suggestions made at that time by Executive Directors. The views expressed in the present study are the author's alone, however, and should not necessarily be attributed to Executive Directors or to the Fund.

The present paper was prepared in the Research Department of the International Monetary Fund by Morris Goldstein. The paper was edited by Joslin Landell-Mills of the Fund's External Relations Department.

It is to be noted that the term "country" used in this document does not, in all cases, refer to a territorial entity that is a state as understood by international law and practice. The term also covers some territorial entities that are not states, but for which statistical data are maintained and provided internationally on a separate independent basis.

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I Introduction

In 1971–73 an average of only eight countries a year had Fund-supported adjustment programs. The world economy had just emerged from a decade (1963–72) in which the volume of world trade had grown at an average annual rate of 8½ percent and in which economic growth in industrial and developing countries was close to, or in excess of, 5 percent a year, respectively. Against such a background of very modest Fund program activity and generally favorable economic performance, the global effects of Fund programs were hardly discussed.

Scarcely more than a dozen years later, the situation is different. To begin with, the number of member countries, especially non-oil developing countries, undertaking Fund-supported adjustment programs has increased sharply in response to severe external payments deficits. In 1980–83, for example, an average of 23 countries a year had stand-by or extended Fund facility arrangements with the Fund; add to these the countries making purchases under the Fund's compensatory financing facility and the figure rises to 31 countries a year.¹ The background of this increase, of course, is the 1980–82 global recession, when, inter alia, economic growth fell short of 2 percent per annum in developing countries and of 1 percent in industrial countries, and when the volume of world trade was virtually stagnant. Seen in this light, it is perhaps not surprising that the global effects of Fund-supported adjustment programs have taken on an increased interest.

At the risk of oversimplification, concerns about the global effects of Fund programs and of Fund policy prescriptions can be categorized into three areas. First, it is argued that simultaneous demand restraint policies in many program countries could impart a procyclical deflationary bias to the world economy, with adverse consequences for real output and employment in non-program and program countries alike.² Second, there

is concern about the consistency of the Fund's policy prescriptions across countries—that, for example, the Fund's prescriptions for appropriate monetary and fiscal policies in industrial countries might imply a lower demand for imports than the export objectives of Fund programs with non-oil developing countries.³ A third related concern is that because one program country's imports are another's exports, trade links among program countries may frustrate the trade objectives of individual countries.⁴ A final concern is that simultaneous exchange rate devaluation by many program countries, some of which export mainly primary commodities, will result primarily in a lower world price for the exports of program countries, with little beneficial effect on their export earnings. The common thread of these positions is that what might be feasible and desirable for a single program country acting alone will be neither for many program countries acting simultaneously.

This paper makes four contributions to the analysis of and debate on the global effects of Fund programs. First, it examines the strengths and weaknesses of alternative ways of defining and measuring the effects of programs, be they domestic effects or global effects. Second, it identifies the channels by which policies in program countries might be expected to affect both non-program and other program countries. Third, the paper reviews the empirical evidence on the likely size of such "aggregation" or "interdependence" effects of Fund programs. Finally, it discusses the ways in which the Fund currently takes these aggregation and interdependence effects into account, both in the design of stabilization programs and, more broadly, in the advice it gives to member countries.

Two restrictions have been placed on the scope of the paper to keep it manageable. First, in keeping with the emphasis on the global effects of Fund programs, the paper does not attempt either to appraise the effects of individual Fund-supported adjustment programs or to assess (in great detail) the effects of all Fund programs on individual regions, countries, in-

¹ Since program periods do not coincide neatly with calendar years, a country was assigned to the program group in any year in which it had a Fund program for at least seven months. In this paper, a country is regarded as a program country only during the period of its Fund program.

² Williamson (1982).

³ See Dell (1981).

⁴ See Meltzer (1983).

dustries, or financial institutions. Thus, for example, the paper investigates how a 15 percent change in the volume of imports in all program countries might affect export volumes and real gross national product (GNP) in industrial countries.⁵ But it does not investigate how, say, Fund-supported adjustment programs in Argentina, Brazil, and Mexico taken either individually or together, have affected U.S. capital goods exports or the market value of financial claims by the largest commercial banks against these particular countries.

The second restriction confines the analysis to the global effects of the most characteristic policy actions of past Fund-supported adjustment programs. (These include, for example, policies affecting the rate of domestic credit creation, the size of the public sector deficit, the level of foreign borrowing, the level of the real exchange rate and of real interest rates, and the restrictiveness of the trade and payments system.) The paper does not consider the international consequences of all possible policy scenarios by program countries. Thus, for example, although 11 of the 25 major borrowers among developing countries had Fund programs in 1983, there is no attempt to estimate the global consequences of, say, alternative large-scale debt rescheduling exercises for groups of program countries.⁶

The plan of the rest of the paper is as follows. Section II considers the thorny but important question of how to define the “effects” of Fund programs. It is argued there that if program effects are defined as the difference between what did happen in program countries and what would have happened in these countries in the *absence* of Fund programs, then any net transmission effects of programs may be quite

different from what is often supposed. A case is likewise made for considering the long-run as well as the short-term effects of programs. Section II also shows why in practice it is so difficult to actually measure the effects of programs. Section III then presents some basic characteristics of the program country population that a priori should affect the size of any transmission effects from program countries to the rest of the world. These characteristics include: (1) the weight or share of program countries in world imports and exports; (2) the extent of trade interdependence among program countries; (3) the share of program countries in international capital flows; and (4) the size of initiating changes in import volumes, export prices, and real exchange rates in program countries themselves during the program period.

Section IV then utilizes these basic characteristics of program countries, in conjunction with some structural and behavioral parameters in industrial and oil exporting developing countries, to draw some inferences about the transmission effects of expenditure changes in program countries. Simulation results are reported for three World Trade Models, namely, the OECD Interlink Model, the Fund’s World Trade Model, and the Project LINK Model. (OECD stands for the Organization for Economic Cooperation and Development.) The focus of Section V is on the global effects of simultaneous exchange rate changes by program countries. In this connection, a distinction is made between exports of differentiated products (such as manufactures) and exports of homogeneous primary commodities. In order to identify those commodities for which exchange-rate-induced increases in production could affect the world price, data are presented on the country-concentration of production for many of the primary commodities that are most important in world trade, as well as on supply-price elasticities for these commodities. Indices of export and import “market power” for most Fund member countries are also presented. Section VI considers how the Fund takes aggregation and interdependence effects of programs into account in its operations. Emphasis is given to the *World Economic Outlook* exercises, to the interchange of information on programs among the Fund’s staff, and to the waiver and modification provisions in Fund programs. Finally, Section VII summarizes the paper’s main conclusions.

⁵ An additional restriction is that in estimating the transmission effects of Fund-supported programs, it is not possible to give as much attention to oil exporting countries as to industrial ones. This reflects the fact that the oil exporting country bloc of practically all existing world trade models is not as developed as the industrial country bloc; in particular, real income of oil exporting countries is typically exogenous in these models.

⁶ This should not imply that the size and maturity structure of foreign debt is not of interest in Fund programs, or that some past multilateral bank debt rescheduling has not been contingent upon the country reaching agreement with the Fund on an adjustment program, or even that the Fund does not support rescheduling in cases where there is prior evidence of significant progress in adjustment. See Brau et al. (1983).

II Definition and Measurement of the Effects of Programs

One of the main reasons why the evaluation of Fund-supported programs has often stimulated such widely varying views is that program effects—and perhaps even more so their measurement—have been interpreted in very different ways. At the same time some of the basic characteristics of program countries, particularly their situation prior to the program period, have often gone unnoticed.

The broad objective of Fund-supported stabilization programs has been summarized as “. . . the restoration and maintenance of viability to the balance of payments in an environment of price stability and sustainable rates of economic growth.”⁷ How can one determine whether Fund programs have fulfilled these objectives? The existing literature on the evaluation of Fund-supported stabilization programs contains no fewer than five measuring rods of the effects of programs:

(1) a factual standard; the difference between macroeconomic performance under the Fund-supported program and performance prior to the program—the before-after approach; what is versus what was;

(2) a normative measure; the difference between performance under the program and the performance specified in its targets—the actual versus target approach; what is versus what was to be;

(3) a conjectural standard (as are 4 and 5); the difference between performance under the program and performance that would have taken place in the absence of a Fund program—the actual versus in-the-absence-of approach; what is versus what would have been;

(4) the difference between performance under the program and the performance that could have taken place under an optimal set of policies—the actual versus optimal policy method; and what is versus what might have been; and

(5) the difference between hypothetical performance under Fund program-type policies and hypothetical performance under some other policies—the comparison of policies approach, i.e., what might have been

under policy A versus what might have been under policy B.

The main strength of the simple “before-after” method is its objectivity. Program effects can be calculated from the changes in the relevant macroeconomic outcome variables as between the pre-program period and the program period. This standard is, however, an inadequate estimator of the independent effect of Fund programs on observed outcomes, because the non-program determinants of these outcomes often change markedly between the pre-program period and the program period. Since the before-after approach attributes all changes to the program, the true effects will be understated or overstated whenever non-program determinants are changing. This problem would not be so serious if the 1970s and early 1980s were not so marked by large non-program influences, including, *inter alia*, two rounds of large oil price increases (in 1973–74 and 1979–80), widely varying rates of economic activity in industrial countries, and large fluctuations in real global interest rates (1973–79 versus 1980–84). The problem is just as serious when, for example, the changing non-program influences are of domestic origin (e.g., shifts in weather conditions that strongly affect agricultural output). Because of the importance of these non-program factors, the before-after approach can be useful to show what happened in program countries, but not why it happened.

As an illustration, Table 1 shows some before-after comparisons of internal and external balance for program countries over the 1973–83 period.⁸ Both weighted and unweighted averages of individual-country outcomes are presented. The main point to note is how variable over time the estimated program effects are. For example, using the weighted average figures, whereas changes in real growth rates in program countries were positive in 1973, 1974, 1976, 1981, and 1982, they were negative in 1975, 1977–80, and in 1983.

⁷ Guitián (1981), p. 93.

⁸ In this and all subsequent tables, program countries include only those for which data are available for the year in question. The occasional exclusion of some program countries for this reason should not qualitatively affect the conclusions.

Table 1. Before-After Comparisons of Macroeconomic Outcomes for Program Countries, 1973–83

(Change from pre-program year, in percent)

	Growth Rate of Real GNP		Inflation Rate		Ratio of Current Account Deficit to GDP		Ratio of Overall BOP to GDP	
	Weighted	Unweighted	Weighted	Unweighted	Weighted	Unweighted	Weighted	Unweighted
1973	3.8	1.5	11	12	4.3	2.6	2.5	1.3
1974	4.9	1.5	140	67	-1.8	-4.2	-1.4	-1.0
1975	-8.3	-4.0	-56	-19	-1.8	0.1	0.4	0.9
1976	0.3	2.9	105	39	4.0	6.5	1.6	1.2
1977	-0.2	1.3	6	-2	4.0	4.5	1.1	1.0
1978	-3.4	0.3	6	2	2.0	0.3	2.0	0.5
1979	-2.7	-3.0	10	6	0.7	0.7	0.6	-0.1
1980	-3.4	-2.5	17	11	-0.8	-1.3	—	-1.1
1981	0.4	0.3	1	2	0.1	-0.3	-0.9	-0.6
1982	1.6	2.6	-1	-4	0.7	2.3	0.7	0.4
1983	-0.7	0.4	41	8	3.2	1.4	4.5	2.6

Source: Fund staff estimates.

Note: Weights are U.S. dollar values of GNP over preceding three years; GNP is gross national product, GDP is gross domestic product, and BOP is the balance of payments.

Similarly, whereas the current account deficit to gross domestic product (GDP) ratio fell in 1974, 1975, and 1980, it rose in the eight other years. Since it is unlikely that the design or implementation of Fund programs changed significantly over this period, the figures in Table 1 suggest that changing non-program factors (of domestic and external origin) were contaminating the true independent effects of programs.

The second, "actual versus target" standard is as objective and straightforward to apply as the first, since targets for the relevant variables are quantified in Fund-supported programs. A comparison of actual with targeted results may also yield useful information on program design; a comparison across many programs, for example, may help to identify those factors—such as the early adoption of planned measures, flexibility in policy formulation, or sustained implementation of adjustment measures—that are most closely associated with the achievement of target outcomes. In addition, and unlike the before-after approach, the actual versus target method can allow for the influence of non-program factors through judicious setting of the program targets.

The other side of the coin is that the actual versus target standard can distort true program effects if targets are over- or under-ambitious, or when unexpected non-program factors intrude and cause outcomes to fall short, hit, or exceed targets. Table 2, taken from a staff review of upper credit tranche standby and extended arrangements approved in 1981, shows a representative comparison of actual and target results for Fund-supported programs in 1981. The comparison disaggregates the results by the main policy content of the programs: demand restraint; supply-oriented; and mixed strategy. The data show that while

the current account, reserves, and inflation were broadly in line with program targets, real growth rates were less favorable than targeted, especially in demand-restraint and in mixed strategy programs. The review goes on to state that this result "... was partly attributable to the impact of depressed international economic conditions on the performance of exports."

Table 2. Actual Results and Targets for 1981 Program Countries

(In percent)

	Demand Restraint Programs	Supply Oriented Programs	Mixed Strategy Programs
Ratio of external current account balance to GDP ¹			
Target	-13.6	-4.3	-12.8
Actual	-12.5	-4.3	-12.6
International reserves ²			
Target	9.9	10.8	6.3
Actual	8.6	10.6	6.2
Real growth rate			
Target	4.2	5.2	3.7
Actual	0.4	4.7	1.5
Rate of inflation ³			
Target	12.3	14.7	18.2
Actual	15.0	11.7	21.7

Source: Fund staff estimates.

Note: This table presents arithmetic averages of selected variables for all of the programs for which data are available. GDP is gross domestic product.

¹ Excludes Dominica and Grenada.² Reserve data refer to the end of the indicated period and are calculated in weeks of imports.³ Excludes Costa Rica and Uganda.

Indeed, exports grew on average by 11 percentage points less than anticipated. The accompanying analysis reports that in early 1981, prospects for an early world economic recovery seemed considerably more favorable than proved to be the case, as Table 3 shows. If forecasts like those in Table 3 were incorporated in program targets, any under-achievement of, say, growth targets need not imply an ineffective program.⁹

The "actual versus in-the-absence-of" approach has at least three important strengths. First, by comparing actual program outturns to what would have happened in the absence of a program, it recognizes that the benefits and costs of a program cannot meaningfully be evaluated in a vacuum; rather, they must be weighed against the benefits and costs of the alternatives. And while the no-program alternative is not the only one, it is in many cases the most realistic. Comparing alternatives is particularly relevant for evaluating Fund programs because, as shown below, there is strong evidence that program countries are in an unfavorable situation with respect to growth, inflation, and the balance of payments before the program period begins. A comparison of actual results with the alternative of having no program also means of course that programs can have positive (or negative) effects even when the macroeconomic indications during the program period itself are unfavorable (or favorable) since the relevant alternative policies may have produced a significantly more unfavorable (or favorable) result.

The second key strength of this third approach is that in principle it permits the separation of program from non-program influences on observed outcomes, so as to produce an estimate of the independent effects of programs. Specifically since what would happen in the absence of a program reflects all non-program influences, exogenous events like oil price disturbances or marked changes in industrial-country growth need not blur the effects of a program.

The fact that estimates of the effects of programs can be adjusted for unexpected events constitutes the third advantage of this approach. Unlike the actual versus target method, which compares actual outturns with targets set prior to or simultaneous with the program period, the actual versus in-the-absence-of method can estimate what would have happened with the benefit of hindsight; it thus bypasses the problem of forecasting accuracy.

The chief problem with the actual versus in-the-absence-of approach is its subjectivity. More specifically, it turns out to be very difficult to estimate what would have happened in the absence of a Fund pro-

Table 3. Forecast and Actual Non-Program Variables, 1981-82

(Annual average percentage change)

	Forecast	Actual
Industrial countries		
Real GDP	1.5	0.4
Import volume	1.5	-1.5
World trade prices		
Oil	12.1	2.5
Non-oil primary commodities	2.4	-13.5
Terms of trade for NODCs	-1.3	-3.3
Interest rates (3-month LIBOR, in percent per annum)	12.0	15.0

Source: Forecasts from *World Economic Outlook*, Occasional Paper No. 4, International Monetary Fund. These forecasts were prepared in early 1981.

Note: GDP is gross domestic product, NODC is non-oil developing countries, and LIBOR the London Interbank Offered Rate.

gram, the so-called counterfactual. First, as indicated earlier, the situation before the program will usually not provide a good basis for an estimate of the counterfactual because non-program determinants of macroeconomic results often change significantly during the program period itself. Second, and perhaps less obviously, the observed macroeconomic performance of non-program countries will generally not be a good control (even when the non-program group consists of other non-oil developing countries) because: first, program and non-program countries appear to differ systematically prior to the program period in ways that probably matter for subsequent economic performance; second, macroeconomic outcomes in non-program countries may not be completely independent of Fund programs; and third, the effects of different policy strategies in program and non-program countries may not be adequately captured by the standard macroeconomic indicators unless the observation period is quite long. Each of these points merits a brief comment.

On the systematic differences between program and non-program countries, Table 4 provides the mean growth rates, inflation rates, and external positions for both program and non-program countries in the year prior to Fund programs. The calculations are done separately for each year since 1972 and for the 1973-83 period as a whole. The message is clear: program countries are different from non-program countries in the pre-program year. They had (on average) larger balance of payments and current account deficits in proportion to GDP, lower rates of real output growth, and generally higher rates of inflation than non-program countries. The same result holds if one uses unweighted averages or if the pro-

⁹ As Guitián (1981) points out, forecasts are not targets, and in some cases targets will be set and announced with the intention of altering actual developments. Nevertheless, good targets usually have to incorporate good forecasts.

Table 4. Macroeconomic Outcomes in Program and Non-Program Countries in Year Prior to Program Period, 1973–83

	Ratio of Current Account to GDP		Ratio of Balance of Payments to GDP		Real Growth Rate		Inflation Rate	
	Program	Non-program	Program	Non-program	Program	Non-program	Program	Non-program
1973	-4.5	-1.5	0.9	1.2	3.1	5.5	8.0	10.9
1974	-1.5	-1.3	-0.1	1.1	-3.5	10.3	232.9	13.3
1975	-6.0	-3.3	-1.2	0.2	4.5	5.2	230.5	19.9
1976	-6.3	-3.7	-0.8	-0.4	2.6	5.1	79.4	20.7
1977	-11.1	-2.4	-0.3	0.9	3.1	4.0	22.3	39.0
1978	-3.6	-2.5	-1.1	1.1	4.3	5.7	70.1	19.7
1979	-4.3	-2.7	0.2	1.2	3.7	6.8	33.8	23.1
1980	-6.2	-3.0	-0.5	0.9	4.3	5.2	26.9	30.2
1981	-4.7	-4.2	-1.0	0.2	3.4	5.4	20.9	41.6
1982	-9.0	-4.7	-2.3	-0.5	2.3	2.8	37.6	37.8
1983	-5.4	-3.7	-5.6	-0.1	-0.2	3.4	62.8	16.0
1973–83	-5.7	-3.0	-1.1	0.5	2.5	5.4	75.0 40.2 ¹	24.7 26.5 ¹

Source: Fund staff estimates.

Note: Non-program countries are all non-oil developing countries that do not have programs in the specified year. GDP is gross domestic product.

¹ Excludes high-inflation years of 1974 and 1975.

gram-country group is expanded to include users of the Fund's compensatory financing facility. These differences between program and non-program countries are statistically significant (at the 95 percent confidence level), and this not only for the program country group and time period shown in Table 4 but for other samples and time periods as well.¹⁰

This finding should not be surprising. After all, a necessary (but not sufficient) condition for the use of Fund resources is that the country display a "balance of payments need." As such the countries that are implementing Fund programs at any given time are likely to have had worse external balance performance prior to the program period than non-program nations.¹¹ In any case, so long as program and non-program countries differ before the program period in ways that can matter for subsequent performance,¹² the behavior of non-program countries will not be a

good guide to what would have happened in program countries in the absence of a program.¹³

The second reason that comparisons between program and non-program countries may not yield good estimates of program effects is that there may be interdependence between program and non-program countries. To the extent that non-program countries are themselves affected by Fund programs, they will not serve as a satisfactory control group. This would be so even if program and non-program countries were identical in all relevant non-program characteristics both before and during the program period.

This interdependence could exist for two reasons. One is that policy decisions among any group of countries competing for market shares are bound to be somewhat interdependent. Thus, for example, suppose country A undertakes a Fund-supported stabilization program and in so doing chooses to devalue its exchange rate by 10 percent to improve its trade account. But now consider country B, which has an export structure similar to that of A and which competes with A in third country markets. Although country B does not have a Fund program, it may also decide to devalue so as not to lose competitive advantage to A. The Fund program has, therefore, affected both a program and a non-program country. Note that

¹⁰ These differences are confirmed not only by t-tests for individual indicators but also by chi-squared tests for differences in the whole set of mean comparisons and by estimation of a linear discriminant function for systematic differences between the two groups.

¹¹ Even if program countries were not screened by the Fund for a balance of payments need, program countries might still differ systematically from non-program countries because they were more or less motivated to adopt the adjustment measures specified in programs. Such "self-selection" as a barrier to control-group methodologies have been much discussed in the labor economics literature. See Heckman (1979).

¹² Note that this problem would not be avoided by comparing changes in outcomes for program and non-program countries unless the changes were independent of the level of outcomes in the pre-program period; staff work suggests that this condition is unlikely to be satisfied in practice.

¹³ This suggests that if non-program countries are to be used as a control group for program countries, any pre-program differences that matter for subsequent performance would have to be held constant in the analysis. An alternative procedure would be to select a control group from the non-program population that does share the same characteristics as the program-country group. See Goldstein and Montiel, 1985.

if the devaluation had the same impact in the two countries, and if B were used as the control group for A, then a comparison of, say, the trade balance between the two would suggest Fund programs had no effect. In fact, of course, the program might have had quite a sizable total effect since it influenced not only program but also non-program countries, and since both groups may have gained at the expense of a third group of countries not included in the control group.¹⁴

The second reason that interdependence might exist between program and non-program countries is that direct interaction could occur through trade. Clearly, measures that affect domestic expenditure, the real exchange rate, or trade restrictions can affect non-program trading partners directly, with the magnitude of these spillovers depending in large part on the weight of program countries in the world economy. If the result of these interactions is to move macro-economic variables in non-program and program countries in the same direction, a comparison of outcomes in the two groups is likely to understate the true total effect of Fund programs.

The third problem that can plague the comparison of program and non-program countries is that the results of markedly different policy strategies between the two groups may only be fully apparent well after the end of the program period.¹⁵ For example, suppose that two countries face identical current account deficits. Country A, with a Fund program, implements a devaluation-cum-expenditure-reducing strategy while country B, without a program, relies on increased trade restrictions and higher international borrowing. Over one year, the change in the overall balance of payments could well be similar for the two countries and it is even possible, again over the short run, that real output and employment may contract less in the non-program country. But when country B is forced to adjust, as it ultimately must, the costs in terms of lower growth, employment, and reallocation of resources may well be larger than the cumulative costs for country A. Yet this would not be reflected in a one-year comparison between program and non-pro-

gram countries. Indeed, in some analyses of program effects, country A would be regarded as a non-program country after the program year. In short, it is necessary to have a good idea of the time lags associated with the effects of alternative policies if true program effects are to be adequately captured.

Finally, there is no compelling reason why the counterfactual cannot be ascertained from a more subjective, but perhaps still valid judgment about the most likely alternative policy scenario at the time of the program. The fact that it may be difficult to find a good control group for program countries, or that the global economic situation may have changed markedly since the pre program period, does not destroy the usefulness of the actual versus in-the-absence-of method. It just means that more judgment may be needed to apply it.

The "actual versus optimal policy" standard is similar in many ways to the actual versus in-the-absence-of approach. The main difference is that it uses another counterfactual—what could have happened under some hypothetical "optimal" set of policies. Those policies could differ from the policies implemented under a Fund program either in the weight given to various program objectives (less to the balance of payments for instance, and, say, more to income distribution) or in the mix of policies deemed consistent with the same objectives (less reliance might be placed, for example, on expenditure-reducing and more on expenditure-switching policy).

The usefulness of the actual versus optimal policy approach plainly depends on the feasibility both of defining the optimal set of policies relevant to program countries and of inferring their effects on macro-economic outcomes during the program period. Four points are relevant here. First, the optimal set of policies should be defined within the international constraints and generally adverse initial conditions faced by program countries. This means, for example, that if the optimal policy calls for slower adjustment and more financing than the existing program, the optimal policy scenario will need to identify the sources of that additional financing (be they private or official) within the overall prospective climate for foreign investment or lending offered by the program country. Second, if the optimal set of policies is to be supported by Fund lending, the optimal policies will have to be framed within the constraints faced by the Fund itself, including its obligation to protect the revolving nature of its resources and its inability to dictate social or political objectives to sovereign governments; the former constraint places lower limits on the speed of adjustment that can be supported with Fund resources while the latter circumscribes the Fund's role in initiating or appraising measures aimed specifically at,

¹⁴ The same problem has long been recognized in labor economics analysis of the effect of unionization on wages; see, for example, Lewis (1963). Specifically, if non-union firms set their wages high enough to deter their employees from joining unions, then a comparison of the mean wages of union and non-union firms may show no difference, even though unionization has actually affected the wages of *both* groups.

¹⁵ Even for program countries alone there are apt to be significant differences between the short-run and long-run effects of programs. In particular, the costs of adjustment are likely to be evident before the benefits, owing in large part to the downward stickiness of wages and prices, to the less-than-perfect mobility of factors of production in the short run, and to the difference between short-run and long-run price elasticities of demand for tradable goods.

say, more equitable distribution of income. Third, the optimal set of policies needs to be defined as specifically as the actual program. For example, if the optimal policy suggests that more emphasis in external adjustment be placed on increasing exports, the price incentives or other measures to achieve the new emphasis have to be specified. Fourth and finally, as with the actual versus in-the-absence-of approach, the counterfactual has to be estimated, because what would happen under the optimal set of policies is unobservable. Indeed, this is likely to be harder to estimate than what would have happened in the absence of a program, because past observations on optimal policy configurations are apt to be harder to find (either in the program country or in other countries) than are the policy configurations of situations without programs.

None of this should mean that calculating the effects of alternative policy scenarios is not useful. The point is simply that if optimal policies are to be used as standards of comparison for the effects of a Fund-supported program, they should be subject to similar requirements. Oranges can only be compared with oranges.

The “comparison of policies” approach, the fifth estimator, is different from the other four in one important respect: it does not infer program effects by comparing actual outcomes in program countries with some past outcome or some estimated counterfactual. Instead, it infers the effects of programs from analyzing the results of policies that typically make up a Fund program. For example, if a representative Fund program calls for, *inter alia*, a lower fiscal deficit, a lower rate of domestic credit expansion, a depreciation of the real exchange rate, and an increase in real interest rates, and if the relationship is known between these policy instruments and the relevant macroeconomic outcome variables (such as the current account, inflation, or the real growth rate), the effects of programs can be simulated by comparing a Fund-program-type policy scenario with an alternative.¹⁶ The parameters used for that exercise often come from small macroeconomic models estimated on a pooled cross section time series sample that includes both program and non-program countries.¹⁷

Table 5, adapted from the staff’s review of 1980 stand by arrangements and 1978–80 extended arrangements, shows that a typical Fund-supported program encompasses a comprehensive set of measures, with emphasis usually laid on credit ceilings, restraint of

public expenditure (especially of public wages and salaries), increases in tax rates and improvements in tax administration, adjustment of tariffs and administered prices, reduction in the ratio of the public sector deficit to GDP, formulation of an investment plan, control of public or publicly guaranteed debt commitments and disbursements, exchange rate reform, export promotion, and overall wage and price policies.

This comparison of policies approach has three principal advantages. First, observations are not restricted to the experience with Fund-supported programs; the approach can draw on much wider evidence on how various policies might affect the objectives of programs. By inferring what programs do from what programs are rather than from what happened during program periods, one can make use of the considerable existing literature on the effects say, of exchange rate changes, or more restrictive monetary policy. Second, by its very nature, this approach focuses on the relationship between policy instruments and targets. This provides useful information on how programs work—a feature that is not shared by those approaches (such as the before-after method) that dwell only on the “bottom line” of programs. Third, because the comparison of policies approach contrasts hypothetical policy packages, its results are not blurred by incomplete implementation of policies. In the other four approaches, program effects reflect both the degree of implementation of policies and the effects of those policies that are implemented. This is not a trivial concern. Previous staff reviews of stand-by and extended arrangements suggest that most policy measures are implemented as planned in only one third to two thirds of the programs.

On the negative side, the comparison of policies approach, while it may be able to contrast the effects of “good” and “bad” policies, may give incomplete or even misleading information on Fund-supported programs, for at least three reasons. One is that the theoretical models underlying such exercises are seldom capable of simulating the range of measures that make up a Fund-supported program. As Table 5 suggests, the characterization of a Fund program by just, say, credit and fiscal deficit measures would be a poor approximation. At the very least, one should add the supply incentives included in programs to generate more domestic savings, more investment, and more exports. Failure to do so could impart a deflationary bias to the simulation exercise itself. Second, even for a given policy measure, the effects may differ depending on whether that measure is introduced within the context of a Fund-supported program. For example, a new target announced for the real exchange rate may be viewed as more likely to be adhered to if it is part of a Fund-supported program than otherwise.

¹⁶ The series of empirical studies done at the World Bank on the effects of outward-looking versus inward-looking policies is one example of this approach; see, for example, Balassa (1980).

¹⁷ See, for example, Khan and Knight (1981).

Table 5. Policy Content of 1980 Fund-Supported Programs

(In numbers of programs)

Policy	Stand-By Arrangements	Extended Fund Facility Arrangements	Total
Monetary policies	17	13	30
Credit ceilings	17	12	29
Reserve requirements	3	2	5
Interest rate policies	11	7	18
Other	2	—	2
Public sector policies	17	13	30
Restraint of: Expenditure	14	12	26
Investment	8	4	12
Subsidies	5	8	13
Transfers	5	7	12
Wages and salaries	10	6	16
Other current expenditure	5	3	8
Other	3	4	9
Reform/improvements	14	13	27
Reform of tax structure	5	6	11
Increase in tax rates	9	8	17
Improvement in tax administration	10	9	19
Other	3	1	4
Nonfinancial public enterprises (NPE)	12	11	23
Curtailment/rationalization of expenditure	6	2	8
Adjustment of tariffs and administration prices	8	10	18
Employment	1	1	2
Wages	2	—	2
Other	1	3	4
Overall public sector			
Reduction in deficit-GDP	12	10	22
Improvement in NPEs			
Reduced bank borrowing (real)	3	3	6
Reduced transfer from government (real)	6	6	12
Formulation of investment plan	6	9	15
External debt policies	15	12	27
Control of commitments/disbursements			
Public/publicly guaranteed	14	11	25
Private sector	3	2	5
Improvement of maturities			
Public/publicly guaranteed	6	4	10
Private sector	2	—	2
Other	2	1	3
Exchange and trade policies	12	12	24
Exchange rate reform	6	6	12
Fixed rate	2	2	4
Frequently adjusted rate	3	4	7
Floating rate	1	—	1
Liberalization/reform of exchange system	3	6	9
Liberalization/reform of trade system	4	5	9
Import substitution measures	—	2	2
Rationalization of import protection	2	1	3
Export promotion or liberalization	5	6	11
Reduction of arrears			
Other	4	3	7
Wage and price policies	15	9	24
General wage restraint policies	10	6	16
Wage guidelines in public sector	9	5	14
Producer price adjustments	7	3	10
Retail price adjustments	7	5	12

Source: International Monetary Fund.

Note: The total number of programs is 30, of which 17 are stand-by arrangements and 13 extended arrangements.

More generally, to the extent that participation in a Fund-supported program alters the credibility of announced policies, one cannot assume that the effects of a program depend only on the magnitude of the change in policy instruments. Third, unless model simulations take due account of the adverse (pre-program) initial position facing the hypothetical program country, they may not fully reflect the effect of policy instruments on their target variables. For example, if the profitability of producing exportables is very low relative to other activities because an increasingly overvalued exchange rate has been maintained for some time, a small or even moderate exchange rate depreciation may have little effect on the production of exportables. In such a case, a simulation of the effects of an exchange rate change based on an initial equilibrium will not produce a good estimate of the effects of such an action in the more realistic situation of disequilibrium.

Before the global effects of Fund-supported programs can be assessed, therefore, it is necessary to have a clear idea of how "effects" of programs should be defined and measured. The main message of this section, simply put, is that not only the size but even the direction of program effects are likely to be quite sensitive to alternative definitions and estimating methodologies. The review of five possible interpretations of program effects shows that the measured effects of the same programs can vary substantially, depending on, *inter alia*: (1) whether changes in non-program factors between the pre-program and program period are accounted for; (2) whether program targets incorporate unexpected developments in the global environment; (3) whether program countries are systematically different from non-program countries prior to the program period in ways that matter for subsequent performance; (4) whether non-program countries are themselves affected by Fund-supported programs; (5) whether the medium-term and long-run as well as the initial effects of programs are considered; (6) whether, because of confidence and credibility factors, the implementation of a given policy within the context of Fund-supported programs has different effects than without it; and, perhaps most important, (7) whether the most relevant comparison for the actual effect of a Fund-supported program is what would have happened without it, or what could have happened under some hypothetical and optimal set of policies.

A good way of illustrating how the alternative definitions of program effects can color the evaluation of programs is to use each method to assess the much discussed recent import compression experienced by countries that had Fund-supported programs in 1983. On a weighted average basis, the volume of imports by program countries fell by almost 8 percent in 1983.

What role should be assigned to Fund programs in this decline?

According to the before-after approach to program effects, all changes are attributed to the program, and the interpretation would therefore be that Fund programs "caused" the fall in import volumes. Since a lower demand for imports by program countries implies, *ceteris paribus*, lower exports for the rest of the world, this would imply, in turn, that Fund programs had a deflationary effect on global economic activity.

The actual versus in-the-absence-of approach means comparing the actual decline in import volumes with the change that would have occurred without Fund-supported programs. In this connection, a sequence of three points is relevant. First, the Fund's lending in 1983 exceeded SDR 12 billion and helped to secure over SDR 20 billion in new bank lending to non-oil developing countries.¹⁸ Second, without the Fund's direct and "catalytic" lending effects, the flow of financing to 1983 program countries would have been much smaller. Finally, based on past empirical work, foreign exchange receipts are the main determinant of the demand for imports in developing countries.¹⁹ All of this would point strongly to the conclusion that Fund-supported programs meant the decline in import volume was less than it would otherwise have been.²⁰ Hence, on the basis of the same argument, the implication would be that Fund-supported programs had an expansionary effect on global economic activity. In addition, one would also want to note that, based on preliminary trade data for 1984, the same group of 1983 program countries exhibited an average increase of 10 percent in their import volumes in 1984—which is consistent with the view that the medium-run effects of programs are probably quite different from their initial impact.

Yet a third, more mixed, verdict might well emerge from the actual versus target or versus optimal policy approaches. If, for example, import volumes fell more than targeted, the verdict might be that the external adjustment achieved under 1983 programs was both unavoidable and better managed than it would have been without programs, but still that the compression of imports went further than would be optimal or desirable from the perspective of longer-term growth. Under these methods, the decline of imports could be attributed to overachievement of fiscal targets, or to greater-than-anticipated adjustment pressures linked

¹⁸ See de Larosière (1984).

¹⁹ See Hemphill (1974), Deppler and Ripley (1978), Waelbroeck (1976), OECD (1983), Glowacki and Ruffing (1979).

²⁰ This conclusion, of course, applies to program countries as a group. There may be individual program countries where limited access to capital markets or the need to use additional financing to build up reserves resulted in a less discernible effect on imports.

to higher-than-expected world real interest rates, or even to the application of restrictive trade controls by program countries that ran counter to program intentions. In any case, the conclusion from this perspective could be that the effect of programs on imports was more expansionary than in their absence but not as expansionary as would be desirable or optimal given the operating environment.

The effects of programs can, therefore, mean dif-

ferent things to different people. This is not all bad because, as shown earlier, none of the separate definitions of program effects is free of shortcomings. Still, unless these different definitions or interpretations of program effects are explicitly recognized, the danger exists that different views on the global effects of Fund-supported programs will be due in large part to the application of different yardsticks to the same evidence.

III Characteristics of Program Countries

Quite apart from the approach selected for measuring the effects of programs, it is clear that the global impact of Fund-supported programs will be strongly influenced by the structural and behavioral characteristics of the program countries themselves. In this section, four of these characteristics are examined: the share of program countries in world trade; the degree of trading interdependence among them; the share of program countries in international capital flows; and the typical size of changes in import volumes, export prices, and real exchange rates that emanate from program countries. One might expect that, other things being equal, the larger these four parameters or disturbances are, the larger would be their global effects. In Sections IV and VI, these global effects of programs are considered within more general equilibrium models and in greater detail. Nevertheless, the characteristics of program countries examined below place natural bounds on the size of these global effects.

Share of Program Countries in World Trade

Table 6 provides a capsule picture of the share of program countries in world trade over the 1973–83 period. Two groups of program countries are considered to cover the sensitivity of the results to alternative definitions of the program-country population. Group A contains countries with stand-by arrangements or extended facility programs with the Fund in a given year; Group B is Group A plus those countries that used the Fund's compensatory financing facility in the same year.

The story told by Table 6 can be summarized under three points. First and most important, even though the share of program countries in world trade has risen steadily over the past decade, it is still quite modest, accounting in 1983 for about 7 percent of global trade and roughly 40 percent of the trade of all non-oil developing countries.²¹ To place those figures in per-

spective, in 1983 the seven largest industrial countries took 49 percent and the United States alone accounted for over 15 percent of world imports. So even with nearly 40 countries under Fund-supported adjustment programs in 1984, the potential for shifts in import demand in these countries to affect economic activity in the rest of the world would seem to be quite limited, especially compared with the industrial countries. In this sense, the fact that most world trade models are designed to trace the transmission of economic activity from the North to the South can be seen as no accident.

A second point that emerges from Table 6 is that the share of world trade attributable to program countries (looking first at the narrower Group A) varies quite a bit over time with changes in the size and composition of the program-country population. The program countries' share of world imports for 1983, for example, was 10 times larger than their average share in 1973–75 (0.68 percent), and more than 4 times larger than their share in 1982 (1.53 percent). The main reason for the sudden increase in their share of world imports in 1983 is that several "large" trading countries (Argentina, Brazil, Chile, Hungary, Korea, Mexico, and Turkey) were added to the program-country group in that year. Likewise, the program-country share of world trade hit a peak of over 12 percent of world imports in 1977 because the United Kingdom and Italy had programs then. Perhaps the main implication of this temporal instability in shares of world trade is that one should not expect any transmission effects from program countries to be stable from year to year. This of course complicates the estimation of the global effects of programs.

Finally, Table 6 also demonstrates that in recent years (1979–82) the share of world trade accounted for by program countries is not much altered when the group of program countries is enlarged to include those with compensatory financing facility drawings. The reason is simply that most countries with stand-by arrangements or extended Fund facility programs also

²¹ To account for the possibility that the share of program countries in world trade could itself be affected by Fund programs, the calculation for 1983 was repeated using pre-program trade data for

1982. The results were qualitatively similar: Group A program countries then took 8 percent of world imports and 8 percent of world exports.

Table 6. Share of Program Countries in World Trade, 1973–83

(In percent)

	World Imports		World Exports		NODC Imports		NODC Exports	
	Group A	Group B	Group A	Group B	Group A	Group B	Group A	Group B
1973	0.75	1.38	0.75	1.33	2.70	4.96	2.84	5.05
1974	0.42	1.22	0.43	1.07	1.99	5.83	2.67	6.68
1975	0.87	0.99	0.53	0.58	3.99	4.56	3.41	3.77
1976	2.59	9.65	2.53	8.11	13.15	48.67	16.08	51.61
1977	12.30	14.94	10.81	12.83	9.81 ¹	23.08 ¹	7.14 ¹	19.87 ¹
	1.92 ¹	4.56 ¹	1.16 ¹	3.25 ¹				
1978	2.13	5.22	1.58	3.89	10.79	26.06	9.93	24.12
1979	3.12	3.47	2.35	2.59	8.38	17.46	8.03	15.69
1980	3.84	5.54	2.56	3.85	18.28	26.22	15.05	22.43
1981	4.70	4.76	3.00	3.03	20.50	20.79	16.63	16.79
1982	1.53	3.47	0.94	2.58	6.97	15.81	5.08	13.85
1983	6.80	7.60	7.40	8.30	37.15	37.71	41.61	42.19
1973–83	3.55	5.29	2.99	4.38				
(Average)	2.61 ¹	4.35 ¹	2.11 ¹	3.51 ¹				

Source: Fund staff estimates.

Note: Group A countries are those with stand-by or extended Fund facility arrangements, Group B countries are Group A plus countries drawing under the compensatory financing facility. NODC stands for non-oil developing countries.

¹ Excludes the United Kingdom and Italy.

made compensatory facility purchases during the 1979–83 period. Hence, the country composition of Groups A and B is quite similar. This was not so between 1976 and 1978, when Group B was considerably larger than Group A. In short, the estimates of the global effects of Fund programs over the past four or five years will not be very sensitive to the inclusion of recipients of compensatory financing.

The fact that program countries as a group typically have rather a modest share of world imports (3.6 percent, on average, over 1973–83) does not mean either the individual countries or even industries could not be seriously affected by changes in the import behavior of program countries, or that these induced effects on exports would be roughly similar across countries and industries. While this study cannot explore such disaggregated distribution effects in great detail, Tables 7 and 8 provide some basic information on the share of exports from individual countries to program countries, and on the commodity composition of the imports of program countries.

Perhaps the most interesting finding to arise out of Table 7 is that group averages on the share of exports going to program countries conceal quite a bit of individual country variation. For example, even among the seven largest industrial countries, the United States and Japan seem, on average, to have been about twice as dependent on program countries for export markets over the past decade as the other five largest industrial countries.²² Similar inter-country variations can be

seen among smaller industrial countries and among oil exporting countries. The export shares of individual countries to program countries are also quite variable over time—the U.S. share increased from 2.1 percent in 1982 to 14.1 percent in 1983 for instance; again this reflects the large changes in the country composition of the program-country group over time.

Turning to the commodity composition of the imports of program countries, Table 8 shows that in 1980 the bulk (61 percent) of these imports were manufactured goods, followed by fuels (22 percent), foods (9 percent), and other primary commodities (8 percent). This calculation is based on the 1983 program-country group but it is likely that the predominant share of manufactures would also emerge for earlier groups of program countries.²³ This suggests of course that the major beneficiaries or victims of sharp changes in the imports of program countries are likely to be those countries for which manufactures bulk large in total exports. Table 8 indicates that these are the industrial countries and the middle-income oil importing developing countries. The data do not permit us to go much beyond that.

To summarize, although the share of program countries in global imports and exports has grown rapidly over the past decade, it was still modest (7–8 percent) in 1983 compared with the shares of other country groups. The share of program countries has moreover

²² This finding mainly reflects the facts that most program countries are non-oil developing countries and that the United States and Japan send about twice as much of their total exports to this group as do the other five large industrial countries.

²³ In 1960, for example, manufactures still accounted for roughly 60 percent of the total imports of non-oil developing countries. The major change between 1960 and 1980 is that the share of fuels doubled at the expense of food and other primary commodities; see Table 11, from the World Bank's *World Development Report 1983* (p. 168).

Table 7. Share of Total Exports of Individual Countries or Groups Going to Program Countries, 1973–83

(In percent)

	1973–83	1973	1974	1975	1976	1977 ¹	1978	1979	1980	1981	1982	1983
Industrial countries	2.4	0.8	0.3	0.8	2.7	2.4	2.4	1.8	3.5	3.1	1.7	6.8
United States	4.0	1.5	0.5	1.4	4.3	6.5	3.2	2.5	4.9	2.9	2.1	14.1
Canada	0.9	0.5	0.1	0.7	0.9	1.0	0.7	0.7	1.2	1.2	0.5	2.8
Japan	4.1	2.1	0.3	1.3	7.3	1.7	2.9	3.4	7.9	3.6	3.3	11.6
United Kingdom	2.3	1.1	0.5	1.3	3.6	2.3	2.7	2.2	2.2	3.7	1.5	4.2
France	2.1	0.3	0.2	0.5	1.7	1.6	2.5	1.5	3.8	4.2	3.0	4.0
Germany, Fed. Rep. of	1.8	0.3	0.2	0.5	2.0	1.4	2.2	1.2	2.9	3.2	0.7	5.3
Italy	2.0	0.2	0.2	0.5	1.4	1.8	3.1	1.9	3.6	3.6	1.8	4.0
Australia	2.6	1.0	1.3	1.1	3.4	2.1	2.1	2.3	3.9	3.2	0.6	7.3
New Zealand	2.1	1.7	0.3	0.4	2.3	0.9	0.9	2.4	3.5	2.8	1.6	5.3
Austria	2.0	0.2	1.5	0.3	1.2	0.9	2.0	1.6	4.5	5.0	0.5	4.6
Belgium	1.1	0.2	0.1	0.4	0.6	1.6	1.0	1.0	1.4	2.6	0.7	2.3
Denmark	1.2	0.3	0.3	0.6	0.6	0.9	1.0	0.8	1.4	2.2	0.9	2.3
Finland		0.2	0.1	0.2	0.7	1.1	2.0	0.9	1.2	1.3	0.3	2.5
Iceland	1.0	—	—	—	—	0.1	4.5	0.2	0.8	1.0	0.1	1.1
Ireland	0.7	0.2	0.1	0.4	0.7	0.9	0.8	0.5	0.7	1.0	0.5	1.5
Netherlands	1.0	0.3	0.1	0.4	0.7	1.1	1.4	0.7	1.4	1.9	0.8	2.5
Norway	1.4	0.2	0.1	0.3	0.7	1.7	2.0	1.4	1.6	2.4	1.5	3.6
Spain	2.6	0.3	0.5	0.6	0.9	1.7	5.1	1.4	3.9	4.5	3.4	7.0
Sweden	1.4	0.2	0.2	0.4	1.0	1.2	2.1	1.0	2.1	2.7	1.0	3.6
Switzerland	2.3	0.4	0.2	0.4	1.9	3.5	3.2	1.8	3.0	2.9	1.3	6.2
Oil exporting countries	3.0	0.8	0.3	0.7	1.9	0.5	1.6	1.8	4.8	5.0	4.9	10.6
Algeria		—	—	—	—	—	—	0.1	—	—	—	...
Indonesia		0.1	0.1	0.6	2.8	0.7	—	1.3	2.4	0.6	—	...
Iran, Islamic Rep. of		—	—	—	—	—	—	—	—	—	0.2	...
Iraq		—	—	—	—	—	—	—	—	—	—	...
Kuwait		3.0	0.2	0.6	9.1	1.8	0.4	2.2	8.5	6.5	—	...
Libya		—	—	—	0.1	—	2.5	2.1	4.4	3.9	—	...
Nigeria		—	—	—	—	—	0.2	1.1	—	—	—	...
Oman		—	—	—	—	—	—	—	—	0.7	2.3	...
Qatar		—	—	—	—	—	—	—	—	—	—	...
Saudi Arabia		2.0	0.6	1.0	2.9	0.7	1.1	1.7	5.3	3.9	2.6	...
United Arab Emirates		—	—	—	—	1.0	0.8	1.0	3.3	7.7	3.3	...
Venezuela		1.0	0.3	0.3	0.5	1.3	3.9	3.1	1.4	2.9	1.3	...

Source: Fund staff estimates.

¹ Excludes Italy and the United Kingdom from program countries.

been quite variable over time, as the number and trading size of program countries have varied. There has also been a great deal of inter-country variation in the share of exports going to program countries over the past decade. The bulk of imports of program countries seems to have been manufactured goods.

Trade Interdependence Among Program Countries

The greater the trade interdependence among program countries, the higher, *ceteris paribus*, would be the risk that any program-induced changes in the demand for imports would be mutually reinforcing—perhaps with larger multiplier effects on aggregate demand than desired or anticipated.

Table 9 shows the share of each program country's total imports and total exports that come from, or go to, all other program countries.²⁴ To get an upper-bound estimate of trade interdependence among program countries, Group B as well as Group A program countries for 1983 were covered in the calculations. In addition, 1981 and 1982 trade data were used, to safeguard the findings from being unduly influenced by the contemporaneous effects of programs themselves. Since the results were quite similar, the following discussion is based on the calculations using 1981 data.

Two conclusions arise out of the data on interdependence. First, the average degree of trade inter-

²⁴ A comprehensive review of trade interdependence among program countries should also include export competition in third markets; this subject is considered in Section V.

Table 8. Commodity Structure of Imports and Exports: 1983 Program Countries and Other Country Groups

(In percent of total imports or exports)

Country Group	1980 Imports			
	Manufactures ²	Food	Fuels	Other primary commodities
1983 program countries ¹	61	9	22	8
	1980 Exports			Other primary commodities
	Manufactures ²	Fuels, metals, and minerals		
Industrial market countries	72	13		15
Developing countries				
Low-income				
China and India	50	20		30
Other low-income	30	9		62
Middle-income				
Upper middle-income	45	32		23
Lower middle-income	18	44		38
Oil exporters	7	78		15
Oil importers	54	12		34
High-income oil exporters	2	98		—

Source: *World Development Report 1983* (World Bank), Tables 10 and 11, pp. 166–69.¹ Weighted averages using 1981 value of imports as weights.² Textiles and clothing, machinery and transport equipment, and other manufactures.

dependence among program countries is rather low. For the 37 program countries (Group B) shown in Table 9, the (unweighted) mean shares of imports to and exports from other program countries were 9 percent and 8 percent, respectively; if only Group A program countries are considered, these means fall to 8 and 7 percent, respectively. This rather low average level of trade interdependence among program countries reflects the more general facts that most program countries are non-oil developing countries and that, as mentioned earlier, these trade most with industrial countries. In 1983, for example, industrial countries accounted for 59 percent of the total imports of non-oil developing countries and for 57 percent of their exports.²⁵ Trade among non-oil developing countries represented 20 percent of total imports and 24 percent of total exports of non-oil developing countries in 1983.²⁶

The second conclusion is that although average interdependence is low, there clearly are some program countries where intra-program country trade is significant. Out of the 37 program countries listed, 11 have more than 10 percent of their trade (an average of imports and exports) with other program countries; for four of them (Bolivia, Malawi, Uruguay, and Zimbabwe), that average is above 25 percent. At least

in these four countries, the multiplier effects of programs in other countries could only be ignored with peril, but there are also some relatively large program countries (such as Hungary, Kenya, Korea, Mexico, and South Africa) where intra-program country trade is quite limited. Again, the aggregate figures conceal quite a bit of inter-country variation.

Because the extent of trade interdependence among Latin American countries has sometimes been cited as an example of why the global effects of programs are apt to be much larger than domestic effects,²⁷ Table 10 provides a more detailed breakdown of intra-program-country trade for five Latin American countries that had programs in 1983—namely Argentina, Brazil, Chile, Mexico, and Uruguay. The tale told by that table is that aside from Uruguay, and to a lesser extent Argentina, trade among these Latin American countries, even prior to the program period, was rather limited and certainly less important than their trade, say, with the United States. If we take these five 1983 program countries as a group, what happens to the U.S. demand for imports and to the U.S. supply of exports would in quantitative terms be a significantly more powerful transmission for their own trade accounts than what happens in partner program countries.

Regarding the commodity structure of intra-program-country trade, is there any reason to believe that it would differ from the structure of the overall trade

²⁵ In 1982, industrial countries took 55 percent of the exports and supplied 57 percent of the imports of non-oil developing countries.

²⁶ In 1982, intra-developing country trade accounted for 25 percent of total exports and 19 percent of total imports of non-oil developing countries.

²⁷ For example, see Meltzer (1983).

Table 9. Share of Trade Among 1983 Program Countries

(In percent)

Country	Group A		Group B	
	Imports	Exports	Imports	Exports
Argentina	15.6	14.0	19.2	15.4
Bangladesh	3.3	10.9	5.7	11.9
Barbados	2.3	0.1	3.1	0.9
Belize	—	—	5.8	1.0
Bolivia	—	—	32.0	38.4
Brazil	9.2	13.7	10.7	15.4
Burma	—	—	3.9	19.3
Central African Republic	0.2	0.1	0.3	0.1
Chile	14.9	16.8	14.9	17.4
Costa Rica	19.6	—	19.7	14.1
Dominican Republic	9.3	0.7	10.3	0.7
Ghana	4.1	2.5	4.1	2.7
Guatemala	13.3	12.5	13.3	12.9
Guyana	—	—	2.9	2.6
Hungary	3.1	1.1	3.1	1.1
Iceland	...	...	1.6	0.4
Indonesia	...	...	8.8	4.2
Kenya	1.2	4.4	1.4	4.5
Korea	3.4	5.9	5.0	7.7
Liberia	1.7	2.5	2.2	2.4
Malawi	...	...	41.5	16.2
Mauritius	14.8	1.9	16.2	1.9
Mexico	4.6	7.8	4.7	7.9
Niger	...	...	1.2	0.2
Panama	14.2	8.2	14.2	8.9
Philippines	...	...	7.2	7.8
Senegal	4.5	5.1	4.3	5.1
Sierra Leone	...	...	0.5	0.6
South Africa	1.1	1.4	1.2	1.4
Sudan	5.9	0.5	5.9	0.6
Thailand	3.2	3.9	3.6	5.9
Togo	2.0	5.8	2.2	6.8
Turkey	1.9	0.8	1.9	0.8
Uruguay	31.1	26.7	31.1	26.9
Western Samoa	...	...	—	—
Zambia	7.7	5.9	8.3	6.8
Zimbabwe	29.0	27.9	27.4	28.2
Unweighted mean	8.5	7.0	9.2	8.1
Weighted mean ¹	6.2	7.4	7.3	7.9
Median	4.6	4.8	5.0	5.1

Source: Fund staff estimates.

Note: The calculations use 1981 trade data for 37 program countries (Group A).

¹ Using 1981 values of imports or exports as weights.

of program countries? The answer appears to be “yes” based on the observations that most program countries are non-oil developing countries and that trade among these is apparently more capital intensive than are their exports to industrial countries. Table 11, adapted from Havrylyshyn and Wolf (1981), provides rough figures on the commodity composition of both exports and imports for a sample of 33 non-oil developing countries in 1977. It shows that the weight of capital goods in exports to other non-oil developing countries

is more than twice as high as in exports to industrial countries. Similarly, the weight of capital goods is more than twice as high for imports by non-oil developing countries from industrial countries as for exports from non-oil developing countries as a whole. One interesting implication of this difference in the commodity structure of trade is that changes in trade among program countries would presumably have smaller effects on employment per unit of exports than changes in trade with industrial countries (because the former is more capital intensive than the latter).

To sum up, for the majority of program countries, trade with other program countries accounts for only a small share of total exports or imports. Such trade has, however, been increasing, and there are some program countries where it is unmistakably important. Finally, it appears that intra-program-country trade is more capital intensive than the trade of program countries with industrial countries.

Share of Program Countries in World Capital Flows

Policies in program countries could affect other countries through trade in financial assets as well as trade in goods and services. In addition, because the availability and terms of financing strongly influence the speed of external adjustment, and because current account deficits create a need for financing, the effects of programs on capital flows can often not be divorced from the effects on trade flows.

As with trade flows, one would expect the global effects of programs to be larger, the larger the weight of program countries in international capital flows. Table 12 shows the size and structure of the external liabilities of all non-oil developing countries in both 1973 and 1983. Three main points arise from Table 12. First, non-oil developing countries have been more attractive as a destination for international lending than as one for foreign investment, with the stock of external debt in 1983 about four times larger than the stock of foreign direct investment, with the former having grown much faster over the decade before 1983 than the latter (18 percent versus 12 percent a year). Second, private creditors have become much more important as a source of external lending to these countries over the past decade, with their share of long-term debt rising from 54 percent in 1973 to 62 percent in 1983. Finally, financial institutions, primarily commercial banks, have been at the forefront of this “privatization” of lending to the developing world, increasing their share in long-term debt from 15 percent in 1973 to 36 percent in 1983—an increase that was reflected in an annual average growth rate of

Table 10. Trade Interdependence Among Selected 1983 Latin American Program Countries

(In percent of total exports or total imports)

	Argentina ¹		Brazil ¹		Chile ¹		Mexico ¹		Uruguay ¹	
	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports
Argentina	—	—	3	3	3	4	—	1	11	9
Brazil	4	13	—	—	4	7	3	2	10	11
Chile	2	3	1	2	—	—	—	—	1	1
Mexico	1	1	1	4	—	1	—	—	—	10
Uruguay	1	2	1	1	—	1	—	—	—	—
United States	10	22	23	15	28	26	58	60	16	8

¹ Exports and imports from country listed in heading to country listed in column 1.**Table 11. Commodity Composition of Trade Among Non-Oil Developing Countries and Between These and Industrial Countries, 1977**

(In percent)

	Non-Oil Developing Countries' Exports		Non-Oil Developing Countries' Imports from Industrial Countries
	To industrial countries	To other non-oil developing countries	
Food and beverages	35.1	32.3	10.1
Non-food agriculture	7.8	9.9	3.0
Metals and minerals	6.3	2.7	2.3
Manufactures	49.9	54.4	82.0
Total non-fuel	100.0	100.0	100.0
Capital goods—broad	9.4	20.4	42.1
Capital goods—narrow	5.3	15.8	38.4
Fuels	19.1	22.3	1.8

Source: Havrylyshyn and Wolf (1981), Tables 8 and 10, pp. 58 and 60.

Table 12. Non-Oil Developing Countries: Changes in External Liabilities, 1973–83

	Stock of Liabilities		Implied Average Annual Growth Rate, 1973–83 (In percent)
	1973 (In billions of U.S. dollars)	1983	
Total external liabilities	177.1	826.4	16.7
Foreign direct investment	47.0	140.9	11.6
Total external debt	130.1	685.5	18.1
Short-term debt	18.4	110.6	19.6
Long-term debt	111.8	574.9	17.8
Official creditors	51.0	219.9	15.7
Private creditors	60.8	355.0	19.3
<i>Financial institutions</i>	<i>17.3</i>	<i>204.1</i>	<i>28.0</i>

Source: Fund staff estimates.

28 percent a year versus the 18 percent a year growth of all long-term debt to the same countries.²⁸

What then about the share of program countries in the external liabilities of all non-oil developing countries? The piecemeal data on foreign direct investment that exist suggest: (1) that program countries accounted for roughly 55 percent of the total foreign direct investment in non-oil developing countries in 1983; (2) that only three countries of the program-country group (Brazil, Mexico, and South Africa), accounted for about 70 percent of the total in 1983; and (3) that in earlier years, program countries seem to have had only a small share (less than 10 percent) of total foreign direct investment in non-oil developing countries.

The same pattern seems to have prevailed with external debt (Table 13). Prior to 1983, Group A program countries had only a modest share of total

²⁸ The debt figures for financial institutions only apply to guaranteed long-term debt.

Table 13. Program Countries' Share of the External Debt of Non-Oil Developing Countries, 1977–83

(In percent)

	1977	1978	1979	1980	1981	1982	1983
Total outstanding debt	18.9	14.5	12.7	22.6	18.4	7.6	56.2
Short-term debt	8.4	26.5	17.8	28.2	7.8	2.9	78.6
Long-term debt	20.5	12.6	11.9	21.6	20.3	8.5	52.9
To official creditors	16.3	13.5	17.5	27.4	33.7	14.9	31.3
Government	18.0	13.5	17.3	27.7	32.6	16.0	27.8
International institutions	12.8	13.5	17.9	26.9	35.5	13.2	36.9
To private creditors	24.0	11.9	9.7	18.1	13.5	6.2	64.0
Financial institutions	28.6	10.5	11.0	16.9	13.4	7.4	66.9
Other private creditors	20.2	13.3	8.4	19.5	13.7	4.7	59.8

Source: Fund staff estimates.

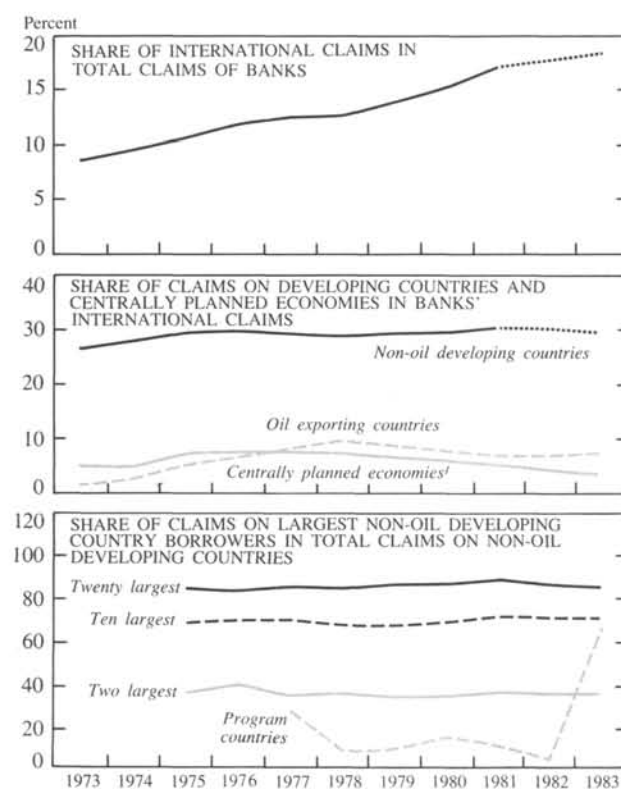
Note: This table covers Group A program countries only.

debt, ranging from a low of about 8 percent in 1982 to a high of roughly 23 percent in 1980. However, with the inclusion of 11 "major borrowing" developing countries in the program-country group in 1983, the situation changes dramatically, as (Group A) program countries then account for 56 percent of the total outstanding debt of non-oil developing countries, 79 percent of their short-term debt, and 67 percent of the long-term debt owed to private financial institutions. This sudden change reflects the concentration of bank lending to developing countries in a relatively small number of major borrowers (see Chart 1), the serious debt-servicing difficulties of these few borrowers in 1982–83 in response to a harsh external environment and inappropriate past domestic policies, and the adoption of Fund-supported adjustment programs by these same countries.

To place in perspective the historically high share of the 1983 program countries in total bank lending to non-oil developing countries, Chart 1 indicates that this group of countries accounted for roughly 30 percent of banks' international claims in 1983 and that international claims, in turn, represented about 18 percent of total claims of banks in that year. All told then, even in the peak year of 1983, program countries probably accounted for only 3–4 percent of banks' total (domestic and international) claims. The problem of course, and this has been brought home vividly in the last few years, is that some large individual commercial banks have much higher exposure in program countries (related to their capital) than the average.²⁹

International bank lending is not the only source of net lending through international capital markets. International bond issues are also important. As

Table 14 shows, however, non-oil developing countries have not been major borrowers in the foreign and Eurobond markets between 1978 and 1983, while industrial countries and international organizations

Chart 1. Concentration of International Bank Claims, 1973–83

Note: Bank claims exclude interbank transactions within the 15 BIS reporting countries.

Source: Staff estimates based on BIS data from *International Banking Developments*.

¹ Exclude Fund member countries.

²⁹ See Brau et al. (1983).

Table 14. International Bond Issues and Placements, 1978–83

(In millions of U.S. dollars)

	1978	1979	1980	1981	1982	1983
Foreign bonds						
Industrial countries	10,328	13,421	11,339	14,129	16,837	18,624
Developing countries	2,583	1,431	746	1,212	726	894
<i>Oil exporting</i>	571	105	46	242	38	78
<i>Non-oil developing</i>	2,012	1,326	700	970	688	816
Centrally planned economies ¹	—	43	—	—	—	—
International organizations	4,906	5,259	5,714	5,030	7,461	7,265
Other	2,896	154	125	159	191	323
Total foreign bonds	20,713	20,308	17,924	20,530	25,215	27,106
Eurobonds						
Industrial countries	9,774	14,212	17,206	25,210	42,816	41,013
Developing countries	3,162	1,885	1,403	3,185	3,970	2,382
<i>Oil exporting</i>	1,110	329	132	170	470	288
<i>Non-oil developing</i>	2,052	1,556	1,271	3,015	3,500	2,094
Centrally planned economies ¹	30	30	—	55	—	25
International organizations	1,820	2,220	1,710	2,486	3,280	6,073
Other	175	344	75	358	263	602
Total Eurobonds	14,961	18,691	20,394	31,294	50,329	50,095
International bonds						
Industrial countries	20,102	27,633	28,545	39,339	59,653	59,637
Developing countries	5,745	3,316	2,149	4,397	4,696	3,276
<i>Oil exporting</i>	1,681	434	178	412	508	366
<i>Non-oil developing</i>	4,064	2,882	1,971	3,985	4,188	2,910
Centrally planned economies ¹	30	73	—	55	—	25
International organizations	6,727	7,479	7,424	7,516	10,741	13,338
Other	3,071	498	200	517	454	925
Total international bonds	35,674	38,999	38,318	51,824	75,544	77,201

Source: Organization for Economic Cooperation and Development, *Financial Market Trends*.

Note: The country classifications are those used by the Fund.

¹ Excluding Fund member countries.

have. In 1983, non-oil developing countries accounted for only 3 percent of all foreign bonds and for only 4 percent of Eurobonds offered; the corresponding percentages for industrial countries and international organizations, taken together, were 96 percent and 94 percent, respectively. Presumably, the preference of investors for “low risk” investments in the turbulent global financial environment of 1982–83 contributed to determining these shares. In any case, the data do not reveal a significant role for program countries as borrowers in international bond markets.

What about the role of program countries as a source of funds for international lending and investment? As shown in Table 15, non-oil developing countries have contributed about 9 percent of the total sources of funds for external bank lending over 1978–83, with that contribution, not surprisingly, varying with the severity of their current account pressures. Again, since program countries are mainly non-oil developing countries, their weight in global financial aggregates, this time as a source of funds for external bank lending, is limited.

Finally, when considering the global effects of Fund-

supported programs that operate via international capital flows, it is crucial to account for the distinction between the influence of Fund-supported programs and that of program countries. In recent years a number of important Fund-supported programs have involved an understanding not only between the Fund and the program country (the borrower) but also between the Fund and various private financial institutions (the lenders)—and this precisely out of concern for the global or systemic effects that might follow if lenders and borrowers in international capital markets took too narrow a view of their own self interest.³⁰ In these much-discussed programs with major borrowing coun-

³⁰ The distinction between the influence of Fund-supported programs and that of program countries on global capital flows also applies, of course, beyond major borrowers. Fund-supported programs can help to stabilize the international financial system as private sector confidence is re-established when program countries adopt Fund policies, and as the Fund assists in multilateral debt-rescheduling operations, not only with commercial banks but also with official creditors. It is significant that Paris Club creditors require as a critical element in the process of debt negotiation the existence of a financial arrangement with the Fund in the relevant country.

Table 15. External Lending by and Deposit Taking of Commercial Banks, 1978–83

(In billions of U.S. dollars)

	1978	1979	1980	1981	1982	1983
Lending to:	90	125	160	165	95	85
Industrial countries	38	69	96	99	55	51
Oil exporting developing countries	15	7	6	2	8	9
Non-oil developing countries	24	40	49	51	25	17
Centrally planned economies	7	6	5	5	-4	-1
International organizations and unallocated	6	3	4	8	11	9
Share of non-oil developing countries (in percent)	27	32	31	31	26	20
Deposit taking from:	90	125	160	165	95	85
Industrial countries	68	66	103	141	100	77
Oil exporting countries	3	37	41	5	-19	-11
Non-oil developing countries	14	13	8	9	5	13
Centrally planned economies	2	5	1	—	2	1
International organizations and unallocated	3	4	7	10	7	5
Share of non-oil developing countries (in percent)	15	10	5	5	5	15
Current account deficit of non-oil developing countries (in billions of U.S. dollars) ¹	-42	-62	-87	-108	-86	-54

Source: Bank for International Settlements (BIS) and Fund staff estimates.

Note: Covering banks in the BIS reporting area.

¹ On goods, services, and private transfers.

tries, lenders have been encouraged to maintain enough new financing to program countries so that the speed and costs of adjustment (in terms of cuts in expenditure and imports) do not become too onerous and so that the Fund's own contribution to filling the financing gap is not merely offset by lower bank lending. Borrowers have also been encouraged to take firm adjustment measures to restore the economic basis for sound debt servicing. The discussion of the domestic effects of programs in Section II raised the concern that without programs in 1982–83, private lenders might have cut back even more sharply on their loans—not only to program countries but to other borrowers in the developing world as well.³¹ (This is sometimes referred to as the contagion effect in international bank lending.)³² The global effects of even lower new private lending to developing countries could well have been serious; it would inevitably have meant larger cutbacks in imports than actually occurred, to say nothing of its adverse effects on borrowers' willingness to pay.

³¹ Even with the efforts made by the Fund and national governments to maintain an adequate flow of financing to non-oil developing countries, lending to them fell from \$43 billion in 1982 to \$26 billion in 1983; more than half the growth of banks' claims on these countries in 1983 was, moreover, in the form of coordinated lending to four Latin American countries and Yugoslavia in conjunction with bank debt restructurings and Fund-supported programs; see International Monetary Fund (1984). It is probably true, however, that the decline in lending to developing countries between 1982 and 1983 partly reflected lower demand for financing as they adjusted; the fall was not exclusively a supply constraint.

³² See Saunders (1983) for empirical evidence on the contagion effect in the international loan market.

The point of all this is not to arrive at a consensus scenario of what would have happened in the absence of some recent Fund-supported programs with major international borrowers. Instead, it is to suggest that because such programs involve lenders as well as borrowers, and because international capital flows seem to be more susceptible than international flows of goods to abrupt changes and to contagion effects, it will be difficult to gauge the global financial effects of programs from shares of program countries in various financial flows or stocks alone.³³

Size of Initial Changes in Program Countries

The characteristics of program countries reviewed so far are relevant for determining how strongly a given income or price change in these countries might be transmitted to the rest of the world. But the global

³³ The rate of growth in bank claims on non-oil developing countries, which averaged 25 percent a year during 1979–81, declined to less than 9 percent in 1982. Similarly, bank lending to non-oil developing countries in the Western Hemisphere fell from \$30 billion in 1981 to \$11 billion in 1982; see Williams et al. (1983), pp. 25–27. The fact that total private lending to non-oil developing countries has been so variable over time also casts doubt on the thesis that any program-induced increases in lending to program countries must come at the expense of less lending to non-program countries. The pool of private lending to these countries is not fixed (except in the very short run). In this connection, it is well to recognize that "contagion effects" can be positive as well as negative. For example, a recovery of confidence in, and lending to, program countries can also encourage lending to non-program countries.

effects of programs also depend on how large these initial changes are themselves. If the initial changes are very large, programs could transmit significant effects, even when program countries account for relatively small shares of global aggregates.

This sub-section reviews the average size of three types of developments in program countries between 1975 and 1983: changes in import volumes; in export prices; and in real effective exchange rates.³⁴ Changes in import volumes are the main channel by which income or output changes in program countries affect those countries that export to them. Export prices are included because they are the channel for transmitting price changes in program countries abroad. Finally, changes in real exchange rates are considered a rough indicator of changes in the competitiveness of exports and import-competing products in program countries; such changes in competitiveness presumably affect production, consumption, and development in tradable goods industries in other countries. *Ceteris paribus*, one would expect the global effects of programs to be larger, the larger are the average size of these initial changes in program countries.

Taking imports first, Table 16 shows that the (weighted) mean change in import volumes for Group A program countries was a fall of 5.5 percent over the past nine years; for Group B program countries, it was a smaller decline of 2.5 percent. In this light, the 7.7 percent fall in import volumes recorded by 1983 program countries is unusual and reflects the strenuous adjustment efforts made by these countries, as well as their reduced access to external finance, especially bank lending.³⁵ The average import volume figures also show that the very large reductions in imports recorded in 1983 by Argentina (17 percent), Brazil (15 percent), Mexico (42 percent), and Uruguay (34 percent) are not representative of all Fund programs; the higher imports in 1983 of Hungary (19 percent), Korea (14 percent), and Thailand (25 percent) also need to be taken into account. In any case, a 5 percent change in the imports of program countries, when multiplied by the mean 7 percent share of program countries in world imports, implies (as a first approximation) a 0.35 percent change in world exports. Even though this admittedly represents only the first round in the transmission of income effects from program countries to the rest of the world, it hardly seems likely to initiate or even seriously exacerbate global recessions.

Turning to prices, the (weighted) mean change in the export prices (in U.S. dollars) of program countries

³⁴ Interest rates are not considered because program countries are best viewed as price takers in international capital markets.

³⁵ Another indicator of the adjustment effort made by 1983 Group A program countries is their lower ratio of fiscal deficits to GNP, which was reduced from 4.1 percent in 1982 to 2.8 percent in 1983.

Table 16. Average Size of Changes in Program Countries, 1975–83

(In percentage change)

	Group	Volume of Imports	Export Prices (In U.S. dollars)	Real Effective Exchange Rate ¹
1975	A	-7.9	-10.8	-13.4
	B	-7.9	-10.8	-11.7
1976	A	-5.4	13.5	13.3
	B	1.4	7.1	4.0
1977	A	-2.5	12.7	-9.6
	B	-1.9	11.6	-7.4
1978	A	-14.5	7.2	1.1
	B	-5.0	7.6	0.4
1979	A	-1.4	20.2	6.4
	B	2.3	20.3	10.0
1980	A	-3.4	12.7	-8.3
	B	-0.3	11.7	1.7
1981	A	-4.4	-4.1	-5.2
	B	-4.8	-1.3	-3.9
1982	A	-2.5	-7.3	-4.8
	B	1.2	-6.0	-1.6
1983	A	-7.7	-1.1	-11.5
	B	-7.7	-1.2	-11.3
1973–83 (Average)	A	-5.5	4.7	-3.5
	B	-2.5	4.3	-2.2

Source: Fund staff estimates.

¹ Nominal rate deflated by the consumer price indices.

over 1975–83 was about 4.5 percent. The annual data show that this mean figure conceals two quite different sub-periods; 1981–83 when the export prices of program countries (and of all non-oil developing countries) were falling under the influence of the world recession, and 1976–80 when those export prices were buoyant under the influence of more satisfactory growth in export markets.³⁶ Relatively small rises in export prices are found around the time of the large 1979–80 oil price increases because oil exporting countries rarely had programs during that period. (For comparison, the export price for net oil exporters among developing countries increased by 39 percent in 1979 and 33 percent in 1980.) Again employing a rough calculation, an average increase in export prices of, say, 5 percent, multiplied by an average program-country share of world exports of 8 percent, yields a 0.40

³⁶ For all non-oil developing countries, real GNP growth in export markets averaged 1.3 percent in 1981–83 compared with 4.0 percent in 1976–80; see International Monetary Fund (1984), Table 14.

percent increase in world export prices. In short, nothing in Table 16 suggests that export price changes in program countries over the past nine years have had major global effects.

Last but not least, the real effective exchange rate of program countries depreciated on average by about 3 percent per annum during 1975–83. Again, 1983 is unusual, and the 11 percent real depreciation recorded by program countries in that year is yet another indication of the strength of their adjustment effort. The fact that the real effective exchange rate of program countries has usually depreciated during the program year is understandable once one recalls (see Table 4) that program countries typically face relatively large current account deficits at the inception of the program period and that improvements in competitiveness are one of the main avenues for reducing such deficits. In fact, it might be argued that any global effects of programs on output are minimized by such expenditure-switching policies (as changes in the real exchange rate) because they reduce the need to rely on expend-

iture-reducing policies as a means of securing external adjustment. As for the size of the real exchange rate depreciation experienced by program countries in 1983, it was somewhat larger than that either for all non-oil developing countries (which was 8 percent) or for the 25 major borrowing developing countries (which was 9 percent). (Note that these three groups overlap to a significant extent because 11 major borrowing developing countries had Fund programs in 1983—a group which also contained some of the largest non-oil developing countries.) Again, this probably reflects the more pressing needs to adjust of the program countries. Since the real exchange rates of the largest industrial countries have been much more variable over the past few years, it would also be difficult to argue that the real exchange rate movements recorded by program countries were “disrupting” the system. At least on the surface, therefore, there is little indication that the changes in competitiveness of program countries over the past few years were inappropriate—either in direction or in magnitude.

IV Global Effects of Changes in Imports in Program Countries

The broad characteristics of program countries that were reviewed in Section III are helpful as a indication of their potential to influence macroeconomic developments in the rest of the world. In order, however, to gain a more focused view of the global effects of Fund programs, it is useful to study such effects within the more formal framework of an econometric global trade model.

The more formal approach is enlightening for at least three reasons. First, while crude share calculations can provide estimates of the "impact" or "first-round" effects of changes in program countries on other country groups, they typically cannot provide estimates of the induced "later-round" effects; yet these later-round, more general equilibrium effects could be quantitatively quite significant. To take a specific example, suppose that program countries experience, on average, a 5 percent fall in the volume of their imports during the program year and that: (1) industrial countries, on average, send 5 percent of their total exports to program countries; and (2) exports average 15 percent of GNP for industrial countries.³⁷ In this case, the impact effect of the lower imports by program countries on GNP in industrial countries would be to reduce the latter by 0.0375 percent (since $0.0375 = 5.0 \times 0.05 \times 0.15$). But what happens next?

To estimate the full effect of the same fall in imports, one would want to know how the induced change in the GNP in industrial countries affects: (1) domestic consumption, investment, the demand for money, interest rates, and so on; (2) trade flows and ultimately real income again within the industrial countries as a group, as lower income induces lower imports from other industrial countries, and another round of exports, real income, and imports; and (3) subsequent trade flows between industrial countries and developing countries (including program countries), as lower

income in industrial countries also reduces the volume and prices of exports from developing countries to that region, and in turn, the foreign exchange receipts, import volumes, and real incomes in developing countries.

Although it is difficult to generalize across global trade models, recent research seems to suggest that such later-round, linked effects can multiply the impact effect of the disturbance by two to three times.³⁸ Returning to our example, this would mean that the full effect of the 5 percent fall in the imports by program countries on real GNP in industrial countries could be to reduce it by 0.075 to 0.1125 percent (compared with the impact effect of a decline of 0.0375 percent).

The second area where econometric models have a comparative advantage over rough share calculations is in estimating the timing of the effects of programs. It is one thing to assert that, say, a fall in the flow of financing to program countries will eventually affect their imports. It is quite another to identify the short-run (one-year) and long-run (three-year) elasticities of import volume with respect to foreign exchange receipts, to say nothing of how these elasticities may differ across groups of developing countries (across low-absorbing oil-exporting developing countries, for instance, compared with low-income non-oil developing countries).³⁹ Since most econometric global trade models explicitly allow for lagged effects in the determination of trade volumes and prices, they can tell us something about the speed with which disturbances in program countries might be transmitted to non-program countries.

Yet a third reason for turning to trade models is that marginal trade propensities may differ significantly from the average propensities captured in the share estimates, and it is changes at the margin that are most relevant for assessing the effects of Fund-supported programs. The share of imports and exports in the

³⁷ In fact, these figures conform rather closely to the actual situation of industrial countries, with 1983 exports to program countries accounting for about 7 percent of their total exports (see Table 7) and with total exports, in turn, representing roughly 15 percent of industrial-country GNP in the same year.

³⁸ See, for example, Helliwell and Padmore (1984), Fair (1979), Larsen et al. (1983), and Hickman and Filatov (1983).

³⁹ See, in this connection, Larsen et al. (1983).

GNP of (industrial countries) has been on a clearly rising trend over the last thirty years, and marginal exceed average propensities when the latter are rising.⁴⁰ Econometric trade models give estimates of the relevant marginal propensities (or elasticities) directly from the estimated coefficients.

In this section, three world trade models are used to simulate the effects on the trade and output of industrial countries of a hypothetical reduction of \$20 billion in the value of imports of developing countries. Each model has strengths that at least partially compensate for the weaknesses of the others.

The OECD Interlink model contains a fully articulated income-expenditure model for each of 23 OECD countries. In these individual country models, blocks of equations determine the main components of demand, wages and prices, foreign trade price and volumes, the distribution of income, output and employment, and financial variables. The non-OECD regional models are much simpler, containing only reduced-form equations for import volume and export-pricing behavior. Because output in the OECD model is endogenously determined for the industrial countries, it is possible to calculate traditional foreign-trade-multiplier effects on real GDP in the industrial countries in response to exogenous foreign trade disturbances. The second attraction of the Interlink model is that it contains an up-to-date foreign trade matrix (for 1982) so that the direction of trade between industrial and developing countries, both in the aggregate and on an individual-country basis, is accurately reflected. However, the simulation properties of the Interlink model have to be gleaned from published results and these only consider the non-OECD area as a group.⁴¹ This means, for example, that program countries (the great majority of which are non-oil developing countries), are lumped together with, say, major oil exporting developing countries, as well as with non-member planned economies; to the extent that the trade behavior of these non-program countries differs from that of program countries, such aggregation into one "non-OECD region" could distort the results.⁴²

⁴⁰ Specifically, the share of exports in the GNP of industrial countries rose from about 8.5 percent in the late 1950s, to roughly 9.5 percent a decade later, and to some 15 percent by the late 1970s and early 1980s.

⁴¹ The Interlink model itself distinguishes eight separate non-OECD regions, three for oil-producing countries (covering the less absorptive, and more absorptive OPEC countries, and oil producing developing countries). The problem is therefore not with the model but only in the restrictiveness of the published simulation exercise to the problem at hand in this paper.

⁴² Differences between oil exporting and non-oil developing countries have led some researchers to build three-region world trade models (industrial countries, oil exporting developing countries, and non-oil developing countries).

The second model used in the simulations, the Fund's World Trade Model, has the advantage that non-oil developing countries constitute a separate group in the model and its published results. Since the commodity composition and direction of trade of the (1983) program countries is apparently quite similar to those of all non-oil developing countries, aggregation problems are reduced.⁴³ This model has two disadvantages for our purposes: industrial-country income is endogenously determined, so that only the effects on trade of a change in imports by developing countries can be studied; and the model's foreign trade matrix relies on 1970 data for the direction of trade between industrial and developing countries.

The third model used is the LINK model of Project LINK. It has two clear advantages for our purposes: (1) real output is endogenous in both industrial and non-oil developing countries, with the latter depending not only on capital stock but also on non-fuel imports in non-oil developing countries; and (2) the published simulation results confine the import shock to non-oil developing countries rather than to all developing or non-OECD countries. The disadvantages of this model are that the published results consider the effects of a \$20 billion change in transfers to non-oil developing countries rather than in their imports, and that both the underlying estimation results and the base-line scenario for computing impact and dynamic multipliers are based on pre-1977 data and forecasts. Of these deficiencies, probably only the outdated estimation period is potentially serious, for two reasons. The first is that the estimated import volume equations in the LINK model itself suggest that imports by non-oil developing countries respond to foreign exchange receipts with a one-year elasticity that approaches unity (so \$20 billion less in transfers to developing countries results, within a year, in a \$16.4 billion reduction in imports by developing countries). The second reason is that the multipliers in the model are apparently not very sensitive to the characteristics of the base-line or control solution.

Before turning to the simulation results, three caveats are appropriate about the inferences that can

⁴³ In 1983, program countries sent 61 percent of their total exports to industrial countries and obtained 58 percent of their total imports from them; the corresponding figure for all non-oil developing countries was 57 percent for both exports and imports. As regards commodity composition, 1983 program-country exports were apportioned as follows in 1981: 44 percent for manufactures and 56 percent for primary commodities. The corresponding figures for all non-oil developing countries were 59 percent and 41 percent, respectively. On the import (for 1980 imports) side, the composition for program countries in 1983 was 61 percent manufactures, 22 percent fuels, and 17 percent other primary commodities and food; the comparable figures for non-oil developing countries were 68 percent, 15 percent, and 17 percent, respectively.

legitimately be drawn from them. To begin with, so long as import decisions in program countries are affected by foreign exchange receipts, changes in imports can reflect a wide variety of program (and non-program) influences—such as the effects of Fund programs on the exports and net capital inflows of program countries, as well as on overall public and private spending and investment. For example, the move from an overvalued to a more realistic exchange rate could simultaneously increase the production of exportables and reduce capital flight in a program country; on both counts, foreign exchange receipts would be altered and imports would change, and this quite apart from any changes induced by the program in, say, the government's fiscal position. For this reason, the results of the import simulations should not be interpreted as implying that Fund-supported programs only work, and have international effects, by directly affecting program countries' ability to import.

The second caveat arises from the earlier discussion of program effects in Section II; historical or observed changes in the imports of program countries should not be equated with the effects of Fund programs. It is the size of the cross-country multiplier that is of interest in the simulation exercise, not the sign of the initiating disturbance. The \$20 billion fall in the imports of program countries used in the simulation exercises should be viewed without prejudice as to the sign of any transmission effects of programs on imports. If, for example, one assumed that without Fund programs the decline in program country imports would have been much larger in say, 1982–83, then the simulations could just as well be run using an increase in imports. In other words, what is of interest in the simulations is the size of the cross-country multipliers, not the sign of the initiating import disturbance.

The third caveat deals with the precision of the simulation results. Such exercises are apt to be subject to fairly wide margins of error because: (1) trade, and especially income determination in developing countries, remains the most primitive part of most global trade models (as an example, exports of developing countries in these models are independent of imported inputs); (2) such trade models are designed for, and best suited to, analyzing transmission from North to South rather than the other way around; and (3) the financial link among developed and developing countries (some of which may respond to the same program measures as imports) is not well developed in these models. The simulation results should, therefore, be viewed as indicative rather than conclusive.

Simulation Results

The effects on real output and trade of a hypothetical \$20 billion exogenous reduction in the imports of the developing countries are given in Tables 17 and 18, which use the OECD Interlink Model and the Fund's World Trade Model, respectively. In the former model, the import reduction applies to the whole non-OECD group, while in the latter, it occurs only for non-oil developing countries. Table 19 shows the results of a similar exercise, namely a \$20 billion exogenous reduction in financial transfers to non-oil developing countries (implying a \$16 billion fall in developing countries' imports), using the Project LINK model.

Using the value of imports in 1983 as a base, a \$20 billion reduction in imports would represent a 14.5 percent fall in the volumes of imports by Group A program countries—a fall that is twice as large as that actually recorded by these countries in 1983, and almost three times as large as the average for 1973–82. Even if some spillover from program countries to other non-oil developing countries is allowed, the size of the fall in imports in these simulations should be large enough to produce an upper-bound estimate of the global effects on output and trade associated with changes in the imports of program countries.

Four findings are apparent from the Interlink model results in Table 17. To start with, the transmission effect of the lower imports of non-OECD countries on real income (GDP) in the OECD group is rather small; the \$20 billion import decline induces a 0.3 percent decline in real GDP in OECD countries. This is in part a reflection of the more general empirical conclusion that cross-country expenditure multipliers are much smaller than own-country ones, usually on the order of one-tenth to one-twentieth as large.⁴⁴ It is also the basis for Hickman and Filatov's conclusion for 13 OECD countries that:

... it remains true that the cross-multipliers, even in elasticity form, are generally low except for small countries that are close trading partners of larger ones. This implies that independent domestic shocks even in large countries are unlikely to lead to synchronized fluctuations in the industrialized world. . . .⁴⁵

The chief implication of this finding is that one should expect the own effects of expenditure-changing policies in Fund programs to be more significant than the cross-country (or global) effects—even when there are some relatively large traders among program countries.

A second finding, implicit in Table 17, is that the final cross-country output effects of changes in the

⁴⁴ See, for example, Hickman and Filatov (1983), Table 2.

⁴⁵ Hickman and Filatov, 1983, p. 349.

Table 17. Effects on Real Output and the Trade Balance of a \$20 Billion Decline in Imports by Non-OECD Regions: Interlink Model

(In percentage change from baseline solution)

	First Year	Second Year	Third Year
All OECD countries			
Real GDP	-0.3	-0.3	-0.3
Exports of goods and services (in volume)	-1.1	-1.1	-1.1
Imports of goods and services (in volume)	-0.5	-0.5	-0.5
Total domestic demand deflator	—	-0.1	-0.2
Current balance (in billions of U.S. dollars)	-9.0	-8.6	-9.1
Non-OECD region			
Export volume	-0.9	-0.9	-0.9
Import volume	-1.8	-1.8	-1.8
Current balance (in billions of U.S. dollars)	9.0	8.9	9.4
<i>Effects on selected countries (third year only)</i>		<i>Real GDP</i>	<i>Volume of Exports</i>
United States		-0.1	-1.0
Japan		-0.4	-1.0
Germany		-0.4	-1.2
France		-0.3	-1.3
United Kingdom		-0.3	-1.2
OECD (Europe)		-0.3	-1.2

Source: Larsen et. al. (1983), Table A10.

imports of developing countries appear to be about 2½ times as large as the “impact” effects. Because non-OECD countries account for approximately 30 percent of total OECD exports, and because total exports are roughly 20 percent of the GDP the OECD group, one would expect a 2 percent fall in non-OECD imports to generate an initial 0.12 percent fall in OECD GDP ($-0.12 = -2.0 \times 0.3 \times 0.2$). But Table 17 indicates that after the induced domestic and foreign trade effects of this initial income decline are accounted for, the fall in OECD GDP will be 0.3 percent. This implies an international multiplier of about 2½ ($-0.3 / -0.12$). At the same time, Table 17 also suggests that these multiplier effects die off very quickly after one year, with the effect on GDP in the OECD countries being identical in the first and third years. This quick decay in the transmission process reflects the rather short time lags in many of the behavioral relationships in the model (in which, for example, non-OECD regional groups reach their peak propensities to spend foreign exchange earnings on imports within one year), as well as the dampening influence of the moderate export openness (OECD exports/OECD GDP) and export destination (OECD exports going to non-OECD/total OECD exports) ratios. The key message is that any global effects associated with changed imports in program countries should have pretty much run their course within a year of the changes.

Third, Table 17 shows that in tracing out the global effects of changes in imports by developing countries, one also has to be aware of the linkages going in the opposite direction, namely, from induced lower OECD imports to lower non-OECD exports. Indeed, for

country groups as broad as those covered by Table 17, the calculations suggest that non-OECD exports fall by half as much (0.9 percent) as non-OECD imports (1.8 percent). This means that if developing countries want a current account improvement of \$10 billion, they would need to reduce their imports by approximately \$20 billion. Since this “feedback effect” increases with the size of group initiating the import change, it is certainly true that the prospects for external adjustment are different when one country reduces imports on its own than when many countries do so simultaneously.

Fourth, the individual-country results shown in Table 17 reinforce the earlier conclusion from the simple export-destination ratios (Table 7) that changes in imports in program countries are likely to have quite a different impact across supplying countries. In particular, even when the transmission effects on exports are quite similar on supplying countries, the effects on their real output can be quite variable because of inter-country variations in export-GDP ratios. The main reason GDP in the United States is less affected by lower non-OECD imports than other industrial countries is that its export-GDP ratio is much lower.

The simulation results from the Fund’s World Trade Model in Table 18 show similar effects on the trade balance after the \$20 billion reduction in imports of non-oil developing countries to those emerging from the OECD Interlink model. For example, the World Trade Model estimates that the trade balance in industrial countries would deteriorate by about \$10 billion in the first year after the import shock, whereas the corresponding estimate in the Interlink

Table 18. Effects on Merchandise Trade Balances in Industrial Countries of a \$20 Billion Decline in Imports by Non-Oil Developing Countries: IMF World Trade Model

(In billions of U.S. dollars)

	First Year	Second Year	Third Year
Merchandise trade balance	-10.1	-11.4	-11.2
Exports	-11.6	-13.0	-12.9
Imports	-1.5	-1.6	-1.6

Source: Fund staff estimates.

model is roughly \$9 billion.⁴⁶ The induced effects on export and import volumes in industrial countries are also similar across the two models. In short, there is nothing in the World Trade Model numbers to contradict the earlier inference that a \$20 billion fall in the imports of non-oil developing countries should not produce large trade and real output dislocations in the rest of the world.

Finally, we come to the simulation results for the Project LINK model. Because income in both OECD and developing countries is endogenous in this model, these are perhaps the most interesting estimates for the purposes of this study. Two aspects of the Project LINK results in Table 19 are worthy of explicit mention.

First, the cross-country effects of the lower transfers to developing countries on real output and the trade balance are larger in this model than in the other two, although they are still considerably below the magni-

Table 19. Effects on Real Output and Trade Balance of a \$20 Billion Decline in Financial Transfers to Non-Oil Developing Countries: Project LINK Model

(In percentage change from baseline solution)

	First Year	Second Year	Third Year
OECD countries			
Real GDP	-0.5	-0.6	-0.4
Implicit price deflator	-0.1	-0.1	-0.3
Value of exports	-3.1	-3.1	-2.3
Value of imports	-1.3	-1.6	-1.5
Trade balance (in billions of U.S. dollars)	-11.2	-9.5	-6.6
Developing countries			
Real income	-1.7	-1.8	-1.5
Value of exports	-1.4	-1.7	-1.4
Value of imports	-8.4	-7.1	-4.6
Trade balance (in billions of U.S. dollars)	13.0	11.3	7.9

Source: Weinberg (1979), Table II.f.

tudes associated with “throwing the world into or pulling the world out of an existing recession.” More specifically, the \$20 billion drop in transfers to non-oil developing countries reduces real GDP in the OECD group by 0.5 percent, export values by 3.1 percent, and import values by 1.3 percent—all within a year. As before, the transmission effects after three years are quite similar to those after one year.

Second, and consistent with the evidence on the size of domestic versus cross-country expenditure multipliers, the import reduction has a much larger (over three times larger) effect on real income in developing countries than on real income in industrial countries. This larger domestic effect arises because, as previously mentioned, the Project LINK model allows a direct role for (non-fuel) import volumes in explaining real income in developing countries.

Summary

The simulation experiments reviewed in this section show that changes in imports by program countries affect economic activity in the rest of the world, and in the expected direction. But, just as important, they strongly suggest that the size of such global transmission effects is small. Specifically, even a 7 percent (or \$10 billion) fall in the value of imports by program countries (such as occurred in 1983) appears to be associated with only a 0.1–0.2 percent fall in real GNP in industrial countries. This is not the stuff of which global recessions are made, or ended.

The same simulation exercises also indicate: (1) that the lion's share of these transmission effects on trade and output take place within one year of the import change; (2) that the full or final effect on real GNP in

⁴⁶ One reason these trade balance results from the two models are so similar is that two differences in the models tend to offset one another. The first difference concerns model coverage. Because the non-OECD region in the OECD model is much broader than the non-oil developing countries covered by the Fund's model, the former permits less leakage from the trade multiplier than does the latter; for example, when imports by non-oil developing countries fall, only a fraction shows up as decreased industrial-country exports since other regions' exports can also fall. Other things being equal, this difference in coverage leads to a smaller effect on the trade balance effect for industrial countries in the Fund's World Trade Model (for the same size import shock). The second difference operates in the opposite direction. Because prices and output in the OECD model are endogenous, a trade shock produces feedback effects that moderate the original disturbance. For example, when industrial-country exports fall in response to a fall in non-OECD imports, so does the former's income, and, in turn, its imports. This is not so in the Fund model because prices, income, and exchange rates are exogenous. This difference produces a smaller industrial-country trade balance effect in the OECD.

industrial countries, albeit small, is considerably larger (say, two to three times) than the “impact” effect; and (3) that even among the seven largest industrial countries, these induced effects on output differ across countries because of inter-country differences in both the share of total exports going to non-oil developing

countries (or program countries), and the share of exports in GNP. Finally, the simulation results imply that the effects of changes in imports of program countries are likely to be much greater on their own real income and growth rates than on those of their trading partners.

V Global Effects of Changes in Exchange Rates of Program Countries

Nowhere perhaps have “aggregation effects” been so long recognized and so much discussed as in the context of simultaneous exchange rate action by primary-producing countries.⁴⁷ Just recently, for example, Please (1984) has criticized the World Bank and the Fund for taking too “piecemeal” an approach to exchange rate policy and has suggested that developing countries should collectively devalue against the currencies of the developed countries. On the other hand, as noted earlier, some observers have taken precisely the opposite tack—warning that exchange-rate-induced increases in production and in exports of primary commodities, if implemented simultaneously by many program countries, will merely depress the world price of these commodities and affect unfavorably the instigator’s terms of trade—and for little benefit since the demand for these goods is quite price inelastic.

In this section, the aggregate or global effects of multilateral exchange rate changes by a group of program countries are examined. The examination proceeds in three steps. First, conventional trade theory is reviewed for whatever light it can shed on the world price and export effects of multilateral exchange rate changes.⁴⁸ Second, several empirical characteristics of primary-commodity trade and of the commodity structure of exports by developing countries are presented to demonstrate the practical relevance of the problem. Finally, the role played by non-program countries, and particularly the industrial countries, in conditioning the effectiveness of exchange rate action by program countries is discussed.

⁴⁷ See, for example, Ridler and Yandle (1972), Belanger (1976), Clark (1977), Isard (1977), Feltenstein et al. (1979), Dell (1981), and Please (1984), as well as the staff study on “Exchange Rate Policies in Developing Countries,” SM/82/8.

⁴⁸ The focus is on the effects of multilateral exchange rate changes on export prices and volumes because these variables are most often mentioned in the debate on the global effects of programs. It is well to keep in mind, however, that exchange rate adjustments can affect other variables as well (such as absorption).

Differentiated versus Homogeneous Goods in International Trade

In thinking about the effects of multilateral exchange rate action by program countries, it is useful to distinguish between exports of differentiated goods (such as manufactures) and exports of homogeneous goods (primary commodities like wheat, sugar, tin, and so on).⁴⁹ Two aspects of that distinction are particularly pertinent.

First, whereas producers of differentiated goods can charge a price that is different from those of their competitors, producers of homogeneous goods are constrained to price their goods at the world price. This world price, in turn, is determined by the interaction of world supply and world demand for the good. This means that one program country, or even a group of program countries, will only be able to affect the prices of their primary commodity exports if they can influence either world supply or world demand. In general, it can be shown that (in the absence of inventory and order backlog changes), a country’s ability to influence the world price of a homogeneous good will depend (positively) on its shares of world production (or exports) and world consumption (or imports), and on the (absolute) value of its own price elasticities of supply and demand for the good.⁵⁰ If a country or a group of countries is too “small” to affect the world price, then increases in domestic supply of the good will increase the volume of exports or reduce those of imports at the given world price.

The clear implication of the global character of price determination for primary commodities is that production (or export) shares and supply-price elasticities are crucial to an assessment of the likely price effects of multilateral exchange rate action by primary-

⁴⁹ Formal models of the determination of trade volumes and prices for the perfect and imperfect substitutes cases can be found in Goldstein and Khan (1984). Also, Feltenstein et al. (1979) contains a simple model of the world price effects of multilateral exchange rate action by primary-producing countries.

⁵⁰ See Clark (1977), Isard (1977), and Feltenstein et al. (1979).

producing program countries. The number of program countries taking exchange rate action, by itself, is not likely to be a useful indicator of serious aggregation effects. For example, simultaneous depreciations by two rice producers that together account for say, 35 percent of world rice exports and have relatively high supply-price elasticities could well have larger effects on global prices than simultaneous exchange rate depreciation by ten program countries that either export quite different primary commodities, or collectively account for only a small share of world exports of a single primary commodity.

A second, related implication of the distinction between the two types of tradable goods is that any "beggar thy neighbor" effects associated with multilateral exchange rate action would probably show up as price effects for homogeneous goods but as a combination effect of volume and price changes for a producer of differentiated goods. In other words, if producers of primary commodities ignore aggregation and interdependence and devalue together they may all receive a lower price than they expected. If producers of manufactured goods ignore interdependence, by contrast, and simultaneously devalue, they may all receive a smaller market share and lower export volume than expected because the competitive price advantage initiated by devaluation tends to be less long lasting than expected.⁵¹ The same distinction also explains why the key parameters of interest in the case of differentiated goods are not global production or consumption shares but rather the elasticity of substitution in demand among export bundles of different producers, the pass-through effects of exchange rate changes onto local currency factor costs and export prices (or how much of the nominal devaluation can be converted to a real devaluation), and the difference between short-run and long-run price elasticities of demand.

If the commodity structure of trade matters for assessing the global effects of exchange rate changes, it should also be pointed out that some conclusions on the inefficiency of exchange rate measures for producers of primary commodities seem to be of dubious validity. This applies particularly to the notion that if a country's terms of trade are fixed (if they can

affect neither the foreign-currency price of its exports nor of its imports), exchange rate changes can be of no value to it. Such an analysis ignores the point that exchange rate adjustments can still "work" on the supply side by increasing the relative price of tradable goods vis-à-vis nontradable goods, that is, by altering the internal terms of trade. Indeed, no matter what the commodity structure of a country's trade, one of the more robust lessons of experience seems to be that a sine qua non for successful export performance is that exporting be consistently profitable relative to other activities in the economy. Put in other words, the relative price variable in the export supply function may well have a different denominator in the case of homogeneous products than in the case of differentiated ones (the price of nontradables, for instance, rather than the domestic price of tradables), but this does not change the basic message that the supply response to an exchange rate change hinges on engineering an improved domestic rate of return to exporting activities.⁵² Even when a country or country group is too "small" to affect the world price for a given primary commodity, exchange rate changes can still improve their export earnings by increasing their export volumes.

Finally, in the real world, neither countries nor tradable goods fit neatly into categories like "price-takers" versus "price-setters" or "homogeneous" versus "differentiated" goods; instead, they fall on a spectrum between these poles, and have more market power over prices of some commodities and less over others. This caveat should be recognized in interpreting the summary empirical characteristics that follow.

Empirical Evidence

The previous discussion suggests that the global effects of multilateral exchange rate changes by program countries cannot be assessed without information on such empirical parameters as the share of primary commodities in the exports of program countries, the shares of program countries in the global production and consumption of primary commodities, supply-price and demand-price elasticities for primary commodities in program countries, and the demand-price elasticities for manufactured exports. In this subsection, some empirical evidence on those characteristics of trade is presented. Because the country composition of the program country group changes so much from year to year, most of the calculations use figures for

⁵¹ There are two different exchange rate scenarios here. In one case, all producers of the differentiated good change their exchange rates by the same amount. Then no one gets the competitive advantage he was seeking and the only result is presumably that nominal prices are high in all devaluing countries. The other scenario is where only some producers change their exchange rates. Here, while each devaluing producer gets less of an improvement in competitiveness than if he acted alone, the devaluing group as a whole still gains at the expense of others. This latter externality can be beneficial or harmful for the world economy depending on a host of factors, including the pre-devaluation external balances of the two groups.

⁵² Consistent with this proposition, where exporting has been continually unprofitable depreciation often induces a large increase in recorded exports of even price-inelastic commodities due to the induced decrease in smuggling.

non-oil developing countries, or sometimes even for all developing countries.

Changing Commodity Composition of Trade in Developing Countries

One of the more fundamental but still relatively unappreciated changes in international trade over the past two decades is the large increase in the share of manufactured goods in the exports of non-oil developing countries.⁵³ As shown in Table 20, the share of manufacturing in the total exports of middle-income oil-importing developing countries has more than tripled (from 17 percent to 59 percent) over the past twenty years. The share of manufacturing has also increased sharply in the exports of low-income countries and of middle-income oil exporters, although the level of that share was still quite low (less than 10 percent). Table 21 gives further information on this shift, using a regional disaggregation of non-oil developing countries, concentrating on the difference between 1968–70 and 1979–81, and disaggregating primary commodity exports into energy and non-energy components. The salient points emerging from Table 21 are that: (1) by 1979–81, fully 59 percent of the total merchandise exports of non-oil developing countries were manufactures; (2) only in non-oil developing countries in the Western Hemisphere did manufactures account for less than half of total exports in 1979–81; (3) the rise in the share of manufacturing between 1968–70 and 1979–81 was greatest among non-oil developing countries in Asia but substantial increases were recorded in the other four regional groups as well; and (4) the falling share of primary commodities in the exports of this group reflected a decline in non-energy commodities.⁵⁴ Indeed, the share of energy primary commodities in the total exports of these countries actually rose from 1 percent in 1968–70 to 7 percent in 1979–81.

This increased importance of manufactured goods in the exports of developing countries has two implications. First, in assessing the global price effects of multilateral exchange rate changes by developing countries, it would be misleading to assume that they by and large fit into a primary-commodity framework. As indicated in Table 20, the dominance of primary commodities on the export side still is accurate for

Table 20. Changing Commodity Composition of Developing-Country Exports, 1960 and 1981

(In percentage share of total merchandise exports)¹

	Manufactures		Primary Commodities	
	1960	1981	1960	1981
Middle-income developing countries				
Oil importers	17	59	83	41
Oil exporters	4	7	96	93
Low-income developing countries				
China and India	...	54	...	46
Other low-income	5	9	95	91
Memorandum item				
1983 program countries	—	44	—	56

Source: World Bank, *World Development Report 1984*, Table 10.

¹ Weighted average.

low-income developing countries (apart from China and India) and for middle-income net oil exporters, but it is decidedly not valid for middle-income oil importers. On a weighted-average basis, as a group non-energy primary commodities now are only a third of total exports of non-oil developing countries (Table 21) and primary commodities as a whole are only two fifths. Interestingly enough, the 1983 class of program countries had a primary-commodity export share significantly above that average, namely 56 percent (see Table 20).

The second implication of the growing importance of manufactures is that because both the price and income elasticities of demand for manufactures are generally higher than those for other commodity groups, there is a strong likelihood that the aggregate price and income elasticities of demand for (non-oil) developing country exports are now considerably higher than they used to be.⁵⁵ Consistent with this proposition, Goldstein and Khan (1982) found that the income elasticity of demand for export volumes from non-oil developing countries was higher during 1973–80 than 1965–72. Similarly, there is increasing evidence that exports by non-oil developing countries do respond significantly to competitive prices on the demand side. For example, Khan (1974) found that the quantity of exports could be well explained for 15 individual non-oil developing countries by the level of real income in the industrial countries and by the ratio of the developing country's export price to an average of export prices of industrial countries; for the 9 of those 15 non-oil developing countries where this price elasticity was significant, its average value over a year

⁵³ In contrast, no such dramatic increase in the share of manufactures has occurred on the import side for developing countries; see World Bank (1984), Table 11.

⁵⁴ Among non-energy primary commodities, the largest declines were in agricultural raw materials and in metals and minerals; the share of beverages and tobacco remained nearly constant while the share of food actually rose significantly.

⁵⁵ See, for example, Goldstein and Khan (1984), Table 4.

Table 21. Merchandise Exports of Non-Oil Developing Countries: Changes in Commodity Composition, 1968–70 and 1979–81

(In percent of total)

Commodity Groups	Total	Africa	Asia	Europe	Middle East	Western Hemisphere
Value Share						
Total						
1968–70	100	100	100	100	100	100
1979–81	100	100	100	100	100	100
Primary Commodities						
1968–70	57	61	53	29	46	73
1979–81	41	48	34	20	35	60
Non-Energy						
1968–70	56	59	52	29	42	72
1979–81	33	36	27	20	17	53
Energy						
1968–70	1	1	2	—	3	1
1979–81	7	11	7	—	18	7
Manufactures						
1968–70	43	39	47	71	54	27
1979–81	59	52	66	80	65	40

Source: Based on United Nations, D-Series Trade data.

was 0.94.⁵⁶ More recently, Grossman (1982) estimated quarterly import demand equations for 11 representative manufactured commodities that entered the U.S. market during 1968–78. Since separate equations are estimated for imports from industrial countries and those from non-oil developing countries, Grossman is able to determine the substitutability among three classes of goods—domestically produced goods, imports from industrial countries, and imports from non-oil developing countries. One of Grossman's main conclusions is that U.S. imports of manufactures from the non-oil developing countries are quite price sensitive, with a mean (own) price elasticity of demand of 1.7 (for a one-year period). These results do not point toward any "elasticity pessimism" for exports from non-oil developing countries.

Primary Commodity Trade

Although manufactures are now clearly much more important than they used to be in the exports by non-oil developing countries, this does not alter the facts that primary commodities are still more than half the exports of (1983) program countries, and that such commodities constitute the mainstay of foreign ex-

change earnings in many individual program countries. For example, again using World Bank data for 1981, primary commodities accounted for 90 percent, 88 percent, 80 percent, 70 percent, and 60 percent of total exports in Chile, Kenya, Argentina, Uruguay, and Brazil, respectively. This is reason enough to examine those factors identified earlier (such as shares in world production and supply elasticities) as crucial in determining the world price effects of multilateral exchange rate changes by primary-producing countries.

Table 22 shows the share of world exports of primary commodities accounted for by developing countries in both 1968–70 and 1979–81. Shares for oil exporting developing countries and for non-oil developing countries, and for energy and non-energy primary commodities, are given separately. Two conclusions stand out. First, the weight of developing countries as a whole, and of non-oil developing countries in particular, in world exports of primary commodities is much lower than is often supposed. Specifically, by 1979–81, non-oil developing countries accounted for only 19 percent of world exports of all primary commodities and for only 29 percent of exports of non-energy primary commodities. Clearly, the dominant exporters of non-energy primary commodities are not the non-oil developing countries but the industrial countries (which account for 68 percent of world exports), whereas for energy, the dominant exporters are, of course, the oil exporting developing countries (who account for 75 percent of world exports). If anything, the figures in Table 22 probably understate the dominance of the industrial countries in the exports of non-

⁵⁶ In a recent study, Winters (1984) was unable to find significant relative price effects in several models of non-oil developing countries' manufactured exports for the 1976–84 period, but attributes that result to "... poorly measured prices and the slightness of relative price changes compared to other shocks to the system," not to low price elasticities themselves.

Table 22. Value of World Merchandise Exports: Changes in the Shares of Country Groups Between 1968–70 and 1979–81

Commodity Groups	World Value (In billions of U.S. dollars)	World	Industrial Countries	Oil Exporting Developing Countries	Non-Oil Developing Countries (In percent of world total)					
					Total	Africa	Asia	Europe	Middle East	Western Hemisphere
Average annual										
1968–70	242	100	78	6	16	3	4	2	1	5
1979–81	1,558	100	74	12	14	2	6	2	1	3
Primary commodities										
1968–70	70	100	51	18	31	7	8	2	1	12
1979–81	471	100	44	37	19	3	6	1	1	7
Non-energy										
1968–70	56	100	60	3	38	9	10	3	2	15
1979–81	247	100	68	2	29	5	9	2	1	12
Energy										
1968–70	14	100	17	80	4	1	1	—	—	1
1979–81	224	100	18	75	7	2	3	—	1	1

Source: Based on United Nations, D-Series Trade data.

energy primary commodities because they do not take into account exports of synthetic substitutes for these commodities. The second conclusion is that the share of non-oil developing countries in world exports of primary commodities has fallen rather significantly over the past decade or so. Whereas their share of all primary commodities was 31 percent in 1968–70, it was, as noted earlier, only 19 percent in 1979–81; similarly, the decline for non-energy primary commodities was from 38 percent of world exports in 1968–70 to 29 percent in 1979–81. More disaggregated figures reveal further that the declines in the export shares of these developing countries were most pronounced for agricultural raw materials, in metals and minerals, and food; the decline was smallest in beverages and tobacco.

More information on the potential of developing countries to influence world commodity prices can be obtained by examining the production, consumption, and import shares (as well as export shares) of individual commodities. Table 23 shows the shares of developing countries in the world production, consumption, exports, and imports of 23 of the more important (non-oil) primary commodities in international trade. Separate share figures are given for all developing countries and for the top three and top five developing country aggregates where data were available.

In brief, two results deserve mention. First, not surprisingly, developing countries have considerably more weight in the world supply of primary commodities (in production and export shares) than in the world demand (consumption and import shares) for them. Of the 23 primary commodities shown in Table 23, developing countries had a 50 percent or greater

share of world production of 16 of these goods; the corresponding figure for world consumption was only 8 goods. This means of course that their influence on the world prices of these commodities typically comes from their role as suppliers. Second, there is considerable variation across commodities in the concentration of production and of exports by developing countries. Whereas production was highly concentrated for coffee, cocoa, tea, rice, jute, natural rubber, tin, and manganese, it was much less so for beef, nickel, primary aluminum, iron ore, lead, and zinc. The potential is therefore greatest for this former group of primary commodities for collective exchange rate action to influence world prices; where the concentration in production is relatively low, as in the latter group of primary commodities, it would take simultaneous exchange rate action by many producing countries to achieve the same impact on world supply.

As indicated earlier, the effects on world prices of exchange-rate-induced supply shifts depend not only on the global production shares of the developing countries but also on their supply-price elasticities for the relevant primary commodities. High supply elasticities, *ceteris paribus*, increase the influence of supplying countries on the world price and low elasticities lower it. Table 24 presents some representative estimates of supply elasticities for a variety of agricultural and mineral primary products. While such estimates are known to be quite sensitive to the choice of country and commodity, to the specification of the model, and to the estimation period, the results seem to point to three general conclusions.

One is that the short-run (one-year) price elasticities are usually much smaller than long-run ones. This suggests that the danger of significant effects on world

Table 23. Shares of Developing Countries in World Production, Consumption, Exports, and Imports for 23 Individual Primary Commodities, 1980
(In percent of world totals)

	Production				Consumption				Exports				Imports			
	Developing Countries				Developing Countries				Developing Countries				Developing Countries			
	World	All	Top Three	Top Five	World	All	Top Three	Top Five	World	All	Top Three	Top Five	World	All	Top Three	Top Five
Coffee	100	99.1	43.0	51.4	100	32.9	...	...	100	94.6	45.7	55.0	100	11.4	...	...
Cocoa	100	99.9	56.1	74.4	100	10.7	...	...	100	100.0	57.9	76.6	100	2.8	...	...
Tea	100	84.2	57.9	68.4	100	57.9	36.8	...	100	100.0	55.6	77.8	100	44.4	...	...
Sugar	100	57.2	24.5	n.a.	100	56.1	22.3	...	100	45.4	18.3	...	100	41.7	...	...
Beef	100	35.1	16.1	...	100	35.4	15.9	...	100	17.6	8.8	...	100	18.8	...	...
Bananas	...	...	...	...	...	...	...	...	100	97.1	49.3	71.0	100	11.9	...	...
Citrus fruits	100	58.1	26.5	32.2	100	50.7	23.9	...	100	73.2	46.5	...	100	14.3	...	...
Rice	100	89.8	63.5	73.3	100	90.7	63.6	72.6	100	57.5	40.2	48.8	100	76.9	...	...
Wheat	100	36.8	23.2	n.a.	100	47.0	25.9	...	100	5.7	...	...	100	56.2	24.0	...
Oilseeds	100	59.5	25.4	35.7	100	58.1	27.1	...	100	64.0	37.7	49.1	100	55.0	25.7	...
Cotton	100	59.0	33.3	...	100	59.7	36.8	...	100	42.9	12.2	18.4	100	50.0	34.0	...
Jute	100	97.5	85.0	...	100	75.6	51.2	...	100	83.3	66.7	...	100	66.7	16.7	...
Natural rubber	100	100.0	81.6	89.5	100	38.5	17.9	...	100	100.0	90.9	...	100	29.4	...	...
Tobacco	100	61.1	31.5	...	100	51.9	27.8	...	100	57.1	21.4	...	100	21.4	...	...
Copper	100	50.0	26.9	...	100	16.8	...	...	100	62.7	39.2	51.0	100	15.1	...	...
Tin	100	86.0	55.4	76.6	100	19.7	...	...	100	85.4	64.4	79.1	100	12.0	...	...
Bauxite	100	52.5	32.7	39.4	...	...	...	...	100	71.5	47.7	54.9	100	1.6	...	...
Nickel	100	33.2	...	...	100	5.9	...	...	100	34.9	...	...	100	3.2	...	...
Primary aluminum	100	16.1	...	...	100	16.3	...	...	100	17.0	...	...	100	13.3	...	...
Iron ore	100	36.4	22.8	...	100	19.4	...	...	100	46.3	32.1	...	100	6.1	...	...
Manganese	100	59.4	45.5	54.4	100	27.3	...	...	100	74.5	63.8	70.2	100	12.8	...	...
Lead	100	30.6	13.9	...	100	20.4	...	...	100	30.0	...	...	100	11.1	...	...
Zinc	100	27.4	12.9	...	100	21.0	...	...	100	23.7	...	...	100	11.4	...	...

Source: World Bank Report No. 814/82, *Price Prospects of Major Primary Commodities*.

Table 24. Estimates of Supply-Price Elasticities for Primary Commodities

Commodity	Country	Period	Author of Study	Short-Run Elasticity (One Year)	Long-Run Elasticity
Cocoa	Ghana	1949–62	Bearman	0.39–0.87	0.71–1.28
	Nigeria	1947–64	Bearman	—	0.45–0.71
	Côte d'Ivoire	1947–64	Bearman	—	0.80
	Cameroon	1947–64	Bearman	0.68	1.81
Coffee	Kenya	1946–64	Maitha	0.64	1.33–1.48
	Brazil	1943–60	Bacha	0.14–0.24	0.37–0.60
	Africa	1947–73	de Vries	0.12	0.44
Cotton	Nigeria	1950–64	Diejomach	0.67	0.67
	Sudan	1951–65	Medani	0.39	0.50
Rubber	Liberia	1950–72	Ghoshal	0.14	0.22
	Nigeria	1952–72	Olayemi and Olayide	0.04	1.75
Tobacco	Malawi	1926–60	Dean	0.48	0.48
	Nigeria	1945–64	Adesimi	0.60	0.82
Copper	Chile	—	—	0.11	0.30
	Peru	—	—	0.15	0.40
	Zaire	—	—	0.17	0.60
	Zambia	—	—	0.20	0.65
Iron ore	Chile	—	—	0.20	0.60
	Peru	—	—	0.20	0.60
Zinc	Peru	—	—	0.19	3.34

Sources: Bond (1983), Feltenstein et al. (1979).

prices being generated by multilateral exchange rate action is much less in the short run than in the long run. Second, for some of the commodities with relatively high producer concentration, such as copper, even long-run elasticities are low enough to dampen the world price effects of exchange rate changes. For other concentrated commodities, however, such as cocoa and perhaps coffee, the potential for induced long-run price effects is larger because the supply elasticities themselves are larger. Third, the sample of significant supply-price elasticities in Table 24 supports the earlier proposition that even with fixed external terms of trade, the capacity exists to boost exports by real exchange rate depreciation if such depreciation can be translated into an increase in the real returns for producing exportables.

Thus far, we have made a preliminary identification of those primary commodities where the potential is greatest for multilateral exchange rate action by producers to affect the world price. It would also be useful to know which countries have a relatively high potential to affect world prices by their own supply or demand actions. For this, not only the relative degree of producer concentration by commodity must be known, but also the shares of those commodities in each country's exports or imports. Clearly, a country whose exports are highly concentrated in a few high-producer-concentration commodities will have more market power in its export markets than one whose exports

are more diversified among low- and high-producer-concentration commodities.

Branson and Katseli (1980) have recently constructed just such an index of market power for the exports and imports of 101 countries, both developing and developed. Specifically, they define export market power (Z_x) as:

$$Z_x = \sum \lambda_i \delta_i$$

where λ_i is the country's export share of commodity i in total world exports of i , and δ_i is commodity i as a proportion of the country's total exports, so $\lambda_i \delta_i$ is the country's export share of commodity i weighted by the relative importance of commodity i in the country's exports. The index of import market power (Z_m) is defined symmetrically. The results, based on 1974 United Nations trade data, are shown in Table 25. Three conclusions stand out.

First, consistent with our earlier results on the shares of developing countries in world production and consumption of individual primary commodities, Table 25 suggests that developing countries have appreciably more market power over exports than over imports. For 1983 (Group A) program countries, for example, the index of export market power was 0.073, while that for imports was only 0.003—only $\frac{1}{25}$ as large. Second, there are large differences among countries even within the non-oil developing country group. The export market power index for say, Malaysia

Table 25. Indices of Export and Import Market Power

Countries	Market Power Indices	
	For exports (Z_x)	For imports (Z_m)
Afghanistan	0.0199	0.0024
Argentina	0.0439	0.0074
Australia	0.0937	0.0042
Austria	0.0070	0.0033
Bahamas	0.0441	0.0105
Bahrain	0.0615	0.0042
Barbados	0.0019	0.0001
Belgium	0.0279	0.0091
Benin	0.0014	0.0011
Bolivia	0.0700 ¹	0.0025 ¹
Brazil	0.0815	0.0139
Burma	0.0163	0.0003
Burundi	0.0070	0.0002
Cameroon	0.0322	0.0003
Canada	0.0500	0.0394
Central African Republic	0.0016	0.0001
Chad	0.0037	0.0003
Chile	0.1240	0.0044
Colombia	0.0600	0.0015
Congo	0.0024	0.0007
Costa Rica	0.0121	0.0004
Côte d'Ivoire	0.0596	0.0008
Cyprus	0.0035	0.0006
Denmark	0.0386	0.0039
Ecuador	0.0075	0.0005
Ethiopia	0.0850	0.0172
Egypt	0.0039	0.0003
Fiji	0.0075	0.0005
Finland	0.0560	0.0040
France	0.0171	0.0247
Gambia	0.0059	0.0004
Germany, Fed. Rep. of	0.0646	0.0272
Ghana	0.1525	0.0008
Greece	0.0091	0.0027
Guyana	0.0046	0.0008
Haiti	0.0023	0.0002
Honduras	0.0048	0.0004
Iceland	0.0313	0.0019
India	0.0240	0.0188
Iran, Islamic Rep. of	0.1244	0.0061
Iraq	0.0036	0.0073
Ireland	0.0133	0.0021
Israel	0.0488	0.0100
Italy	0.0318	0.0266
Jamaica	0.0535	0.0007
Japan	0.1068	0.1104
Jordan	0.0128	0.0005
Kenya	0.0226	0.0008
Kuwait	0.0774	0.0014
Laos	0.0011	0.0009
Liberia	0.0345	0.0006
Libya	0.0685	0.0019
Madagascar	0.0168	0.0019
Malawi	0.0151	0.0002
Malaysia	0.1928	0.0023
Mali	0.0034	0.0039
Malta	0.0006	0.0008
Mauritania	0.0285	0.0029
Mexico	0.0089	0.0041
Morocco	0.2519	0.0029
Netherlands	0.0393	0.0115

Table 25 (concluded). Indices of Export and Import Market Power

Countries	Market Power Indices	
	For exports (Z_x)	For imports (Z_m)
New Zealand	0.0861	0.0018
Nicaragua	0.0143	0.0005
Niger	0.0027	0.0002
Nigeria	0.0737	0.0033
Norway	0.0342	0.0242
Oman	0.0737	0.0033
Pakistan	0.0056	—
Panama	0.0402	0.0032
Papua New Guinea	0.0427	0.0005
Peru	0.0219	0.0016
Philippines	0.0552	0.0019
Portugal	0.0337	0.0019
Qatar	0.0015	0.0041
Rwanda	0.0034	0.0008
Saudi Arabia	0.2770	0.0023
Senegal	0.0213	0.0029
Sierra Leone	0.0102	0.0002
Singapore	0.0761	0.0115
Somalia	0.0092	0.0003
South Africa	0.0160	0.0067
South Korea	0.0206	0.0100
Spain	0.0144	0.0140
Sri Lanka	0.0894	0.0399
Sudan	0.0177	0.0021
Sweden	0.0374	0.0105
Syrian Arab Republic	0.0094	0.0012
Thailand	0.0529	0.0018
Togo	0.5500	0.0005
Trinidad and Tobago	0.0571	0.0083
Tunisia	0.0198	0.0006
Turkey	0.0278	0.0037
Uganda	0.0369	0.0001
United Kingdom	0.0324	0.0303
United States	0.0881	0.0825
Upper Volta	0.0026	0.0003
Uruguay	0.0134	0.0004
Venezuela	0.1283	0.0136
Yugoslavia	0.0055	0.0024
Zaire	0.0466	0.0007
Zambia	0.1410	0.0007

Source: Branson and Katseli (1979), Table 4.

¹ Data refer to 1972.

(49 percent of world tin exports and 26 percent of world rubber exports in 1974), or even that for Ghana, Zambia, or Chile, is four to five times higher than that (0.042) for all non-oil developing countries, and more than twice as high as that for all 1983 (Group A) program countries. Clearly, in assessing the probable world price effects of multilateral exchange rate action by a group of program countries, it does make a difference which countries participate; joint action by high-market-power countries would have more serious price repercussions than joint action by (even a larger group of) low-market-power countries.

Observe also that, on this index of market power, global export or import shares alone are not necessarily a fail-safe predictor of market power; for example, Table 25 indicates that Japan, not the United States, has the highest import market power of the 101 countries in the table (presumably because high-concentration consumption goods represent a larger share of its imports). Third, at least for 1983 program countries, the degree of import power of program countries was about the same as for all non-oil developing countries. Their export market power was significantly higher. This suggests that the risk of aggregate price effects from multilateral exchange rate action is somewhat greater for program countries than for all developing countries. This conclusion however seems to be quite sensitive to the year's country-composition of program countries. In 1982, for example, program countries had slightly lower average export market power (0.034) than all non-oil developing countries (0.044).

Role of Industrial Countries

So far, the analysis of the likely impact of multilateral exchange rate changes by program countries has concentrated almost exclusively on the "producer" or "exporter" side of the market. It is abundantly clear, however, that the impact of exchange rate action will be no less conditioned by what happens on the "consumer" or "importer" side of the market. Since, as previously documented, the majority of exports from non-oil developing countries and program countries go to industrial countries, the effectiveness of exchange rate action by program countries cannot be evaluated without discussing the economic policy scenario and underlying trade behavior of those industrial countries.

Two basic points are relevant. First, if non-oil developing countries are to further reorient their export structures toward manufactures to benefit from the relatively high price and income elasticities of demand for these goods, industrial countries will have to be willing allies in that transformation. As shown in Table 26, both price and income elasticities of demand appear to be higher for manufactures than for non-manufactures, at least in industrial countries. This, coupled with the fact that manufactures have been the fastest growing component of exports of non-oil developing countries over the past twenty five years, has been an incentive for developing countries to orient their production and export patterns more and more toward (labor-intensive) manufactures. But even if many primary-producing non-oil developing countries were convinced of the wisdom of such a change in export structure, and could obtain the funds to finance it,

their efforts could come to naught unless industrial countries were willing to provide satisfactory access to their own markets. Without such access, the greater volume of manufactures could not be sold at above "dumping" prices (or in sufficient volume if quantitative restrictions applied). Also, without such access, it would be impossible to induce those non-oil developing countries that are already major exporters of manufactures to move up the "chain of comparative advantage" and produce more skill and capital-intensive manufactures to make room for the "new" producers of manufactures.⁵⁷ This is why a Fund staff report on Exchange Rate Policies in Developing Countries, concluded that:

... from an optimal standpoint, the speed of adjustment of the non-oil developing countries exporting primary products should in part be related to the speed at which industrial countries are able to adjust to a larger and more diversified flow of imports from the rest of the world.

It is also why projections for exports by non-oil developing countries in the Fund's *World Economic Outlook* analyses are always made conditional on the stance of protectionism in the industrial countries.

The importance of increased access to markets in the industrial countries would not have to be emphasized so much were it not for evidence: (1) that the postwar momentum toward trade liberalization came to a halt in 1979 and has suffered some reversal since then;⁵⁸ (2) that the piecemeal protectionist measures adopted by industrial countries have tended to fall hardest on sectors (particularly labor-intensive manufacturing) where non-oil developing countries have, or are likely to have, a comparative advantage;⁵⁹ and (3) that industrial countries have recently (1983) begun to rely more on quantitative controls and quotas—on measures that cannot be offset by exchange-rate induced gains in price competitiveness.⁶⁰

While the effects of existing trade barriers in industrial countries on exports by non-oil developing countries are notoriously difficult to quantify, estimates from the recent empirical literature strongly suggest that these effects are far from trivial.⁶¹ For example, Cline et al. (1978) have estimated that a 60 percent reduction in industrial countries' tariff and agricultural nontariff barriers would increase exports by non-oil

⁵⁷ For an empirical analysis of how the structure of developing-country exports changes with the stages of development, see Balassa (1980).

⁵⁸ See Bergsten and Cline (1983).

⁵⁹ See Anjaria et al. (1982).

⁶⁰ See International Monetary Fund (1984).

⁶¹ For an analysis of the problems, issues, and methods associated with quantifying protection, see Kirmani et al. (1984).

Table 26. Estimates of Long-Run Price and Activity Elasticities for Import Categories in Industrial Countries

Commodity Categories	Deppler-Ripley ¹ (1978)	Taplin ² (1973)	Basevi ³ (1973)	Clark ⁴ (1977)	Ball-Marwah ⁴ (1962)	Houthakker-Magee ⁴ (1969)	Barker ⁵ (1976)	Stern et al. ⁶ (1976)	Theil and Clements ⁷ (1978)
Price Elasticities									
Foods and beverages (SITC 0+1)	-0.34	-0.57	-0.55	-1.14	-0.47	-0.18 to -0.28 to	-0.13 -0.18	-0.78	-0.58
Raw materials (SITC 2+4)	—	-0.63	-0.13	-1.25	-0.83	-1.8	-0.44	-0.50	-0.95
Fuels (SITC 3)	—	-0.63	-0.04	—	...	...	...	-0.96	...
Manufactures and miscellaneous goods (SITC 5-9)	-0.97	-1.23	-0.71	-4.72	-1.98	-1.8 to -4.0	-1.37	-1.34	-1.16 to -1.4
Activity Elasticities									
Foods and beverages (SITC 0+1)	2.83	0.84	1.08	0.38	0.96	0.30 to 1.28	1.12 1.16	...	0.14
Raw materials (SITC 2+4)	0.32	0.75	0.83	0.96	1.15	0.61	1.91	...	0.25
Fuels (SITC 3)	1.22	0.96	1.40	—	...	—	...	...	...
Manufactures and miscellaneous goods (SITC 5-9)	1.27	1.44	1.46	2.60	2.07	1.11	1.99	...	0.28 to 0.32

Source: Goldstein and Khan (1984), Table 4.

¹ Unweighted average, 14 industrial countries.

² Unweighted average, 25 industrial or semi-industrial countries.

³ Unweighted average, 10 industrial countries.

⁴ United States.

⁵ United Kingdom.

⁶ Median estimate, all industrial countries.

⁷ Pooled, cross-section for 13 industrial countries.

developing countries, exclusive of oil and textiles, by approximately 3 percent (using 1974 values); a similar liberalization of textile trade would, according to the same authors, produce perhaps another 3 percent increase in exports earnings by these countries. More recently, Whalley (1984) has used an applied general-equilibrium trade model to estimate the income effects associated with, inter alia, the abolition of tariff and non-tariff barriers in industrial countries. Interestingly enough, he finds that removal of protection in industrial countries would increase income in non-oil developing countries by roughly \$30 billion—a figure larger than the approximately \$20 billion annual aid flow from the North to the South.⁶²

The second basic point about the role of industrial countries is that their own business cycle, inflation, and exchange rate developments can often—in fact

usually do—swamp the effect of exchange rate changes by non-oil developing countries on world commodity prices. Goreux (1980), analyzing a sample of 37 (non-oil) primary commodities over 1962–79, found that each 1 percent change in an industrial-country business-cycle index was associated (*ceteris paribus*) with a 2.2 percent change in primary commodity prices, while each 1 percent change in the prices of manufactured exports by the industrial countries associated with a 0.7 percent change in primary commodity prices.⁶³ More recently, Chu and Morrison (1983) undertook a more extensive analysis of the determinants of non-oil primary commodity prices over 1958–82. They found that much of both the long-term and short-term movement in these commodity prices could be explained by changes in industrial production, and in inflation rates adjusted for changes in major currency

⁶² It should be mentioned that Whalley (1984) also finds that protection in the South carries large welfare costs; this occurs because, even though the South is relatively “small” in world trade, its ad valorem tariff rates are relatively high.

⁶³ It is interesting to note that in Project LINK, commodity prices are similarly made a function of OECD real GNP, the price of OECD manufactures, and world production of the commodity; see Glowacki and Ruffing (1979).

exchange rates (vis-à-vis the U.S. dollar) in the industrial countries. The point is not that exchange-rate induced production changes by non-oil developing countries do not matter for primary commodity prices; like other supply shocks, surely they do. But they are by no means all that matters, or even probably what matters most. For this reason, it is important not to conclude that because the prices of non-oil primary commodity exported by non-oil developing countries were weak in 1981–82, and because these countries were depreciating their exchange rates during that period, the latter necessarily was responsible for the former.⁶⁴ The roles played by the recession, the high inflation, and interest rates in the industrial countries, and the appreciation of the U.S. dollar vis-à-vis other industrial-country currencies also need to be taken into account.⁶⁵

Summary

This section has explored the possibility that simultaneous exchange rate action by program countries could have serious aggregate effects on the prices of exports by program countries. It has been argued that this proposition should be applied mainly to primary

commodities and that the potential for significant aggregate price consequences depended mainly on the ability of program countries to affect world supply. While this potential is clearly much higher for some commodities (cocoa, coffee, natural rubber, or tin) than for others (wheat, citrus fruits, or iron ore), and in the long run rather than the short run (because supply elasticities were much larger in the long run than in the short run), the risks are much reduced in practice because (1) primary commodities now represent a significantly smaller share of exports by non-oil developing countries than they did two decades ago; (2) the share of non-oil developing countries in world exports of primary commodities is now also considerably smaller than even a decade ago; and (3) not all program countries change their exchange rates at the same time and those that do usually do not export the same products.⁶⁶ Still, such interdependence and aggregation effects associated with multilateral exchange rate action need to be closely monitored and this section has identified the individual non-oil developing countries and primary commodities where “market power” seems to be relatively high. A case has also been made for the view that exchange rate adjustment can be useful to protect the profitability of exporting even for those non-oil developing countries who face fixed external terms of trade. Last but not least, the role played by industrial-country policies in conditioning the effects of exchange rate action by program countries has been emphasized.

⁶⁴ The prices of non-oil primary commodities exported by non-oil developing countries fell by about 15 percent by 1981 and by roughly 13 percent in 1982; see International Monetary Fund (1984), Table 11.

⁶⁵ The *World Economic Outlook* (International Monetary Fund, 1984) concludes: “. . . Changes in economic activity in the industrial countries, as measured by movements in their composite index of industrial production, appear to have been the most important factor affecting commodity prices both in the 1972–1977 cycle and subsequently.” (p. 139).

⁶⁶ It is also relevant that exchange rate changes in program countries are typically made only when the exchange rate has become unrealistic and when alternative actions to exchange rate policy have already been considered and rejected.

VI Aggregation and Interdependence Effects in the Fund's Operations

The theoretical and empirical material presented thus far is relevant for assessing the likely size and direction of any global effects of Fund-supported adjustment programs. In this section, attention is turned toward an equally important and closely related subject, namely, if and how the Fund accounts for aggregation and interdependence effects in both the advice it gives to member countries and in the design of Fund programs themselves. This latter subject is important because even if Fund-supported programs did have strong potential global effects, these effects could in principle be compensated for, both in the design of programs and in the advice given by the Fund to non-program countries. For example, if the process of achieving greater fiscal responsibility in program countries had significant multiplier effects on aggregate demand in non-program countries, and if these spillover effects were both larger than desired and their size and timing were known, then an adjustment could be made to the design of programs to reduce such spillovers. Similarly, if the international adjustment process is working smoothly, any reduction in absorption in countries with balance of payments deficits should be offset by an increase in absorption in surplus countries, leaving global aggregate demand little affected. In other words, trouble arises only if the global effects of programs are significant and if these effects are ignored in the design of policy in program countries and in the Fund's advice to non-program countries.

By its very nature, the Fund must be concerned about the global or systemic effects of policies of its individual members. Indeed, the *raison d'être* of the Fund and most of its activities is precisely the principle that the effects on other countries of the policies of individual members can be significant and that an institution is needed to ensure that countries with balance of payments problems do not take measures that have dramatic and unsatisfactory international repercussions. In fact, both the Fund's lending activities and its surveillance functions are largely directed toward meeting that objective. Also, as suggested in

Section II, some of the Fund's most visible activities during the past few years have been motivated by just such global or systemic concerns. Two of the best examples are the Fund's efforts to deal with the debt problems of members that had borrowed beyond their debt-servicing capacity and the Fund's recent policy advice to the United States concerning its fiscal policy. The relevant question is not whether the Fund ought to consider the global and systemic effects of its advice and programs but rather how it can best do so.

Since so many of the Fund's normal activities are associated with monitoring of the third-party or systemic effects of member-country policies (such as new trade and exchange restrictions), the discussion of aggregation and interdependence effects in this section will be selective. Specifically, it will concentrate on three aspects of policy advice and program design: (1) consistency and aggregation of policy effects across countries, as analyzed with the Fund's *World Economic Outlook* exercises; (2) the incorporation of information on other countries' policies into policy recommendations for a given country; and (3) the provisions for waivers and modifications in Fund programs.

Consistency and Aggregation of Policies Across Countries

If there is a single guiding rationale for the Fund's *World Economic Outlook* exercises, it is that surveillance of the international monetary system, or even of an individual country's economic policies, must at some stage have a global framework. Only in such a framework can consistency of policy objectives and macroeconomic forecasts across countries be checked, the repercussions of one country's policies on others be examined, and the aggregate effect of (largely) uncoordinated policy strategies be evaluated. Appraisal of country policies in the depth normally associated with individual Article IV consultations is

of course also necessary—but it does not ensure global consistency.

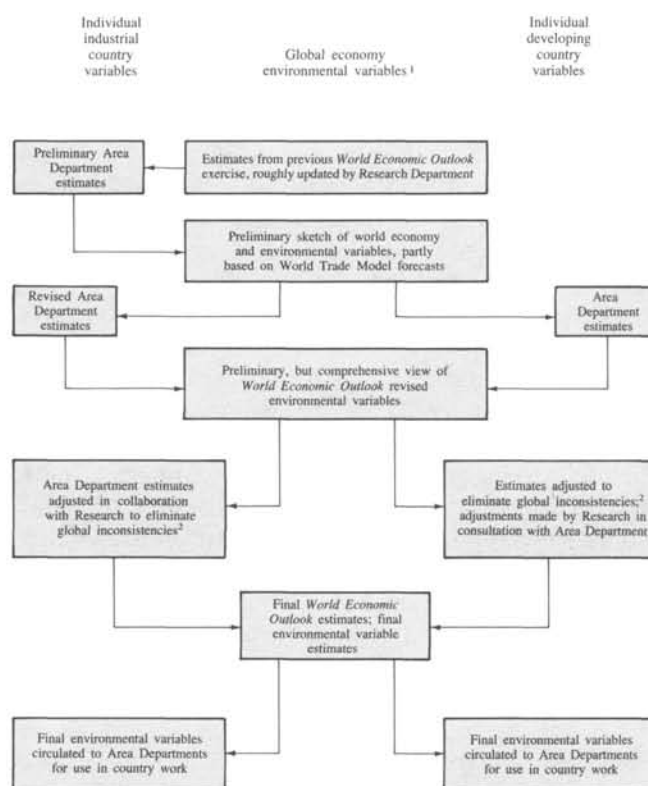
The methodology employed in the *World Economic Outlook* is largely geared to achieving global consistency, especially in its short-term projections, which at the moment cover the period to the end of 1986. For the purposes of this paper, three aspects of that methodology are important. First, the projections for growth, trade flows, balance of payments, external debt, and debt service are derived in three complementary ways: by a survey approach that relies on the forecasts of desk economists in the Fund's Area Departments; by an econometric approach that involves the estimation of regression equations for key trade relationships (for example, the response of exports to market growth and changes in competitiveness); and by an historical approach that relies on past historical relationships when econometric estimates are not available.

A virtue of this multiplicity of approaches is that it provides some protection against "independence" error, that is, against the error that arises when each country does not take into account the actions of other countries in making its own forecasts. Suppose, for example, that each non-oil developing country assumes (incorrectly) that its own devaluation will not be matched by other non-oil developing countries. In that case, each country will overestimate the impact on its export earnings. This type of independence error should be uncovered either when estimates are aggregated across all countries or when the survey projections are compared with the projections derived from the econometric approach. Without offsetting errors, the overestimation of export earnings will lead to more global exports than global imports and to an improvement in the global balance on current account. These developments in turn should trigger a search for the likely source of the difficulty, a search that should include checking the econometric evidence. This evidence should, at least in principle, serve to pinpoint the cause of the inconsistencies, since (for non-oil developing countries) the econometric approach takes analytical subgroups of these countries (for example, major exporters of manufactures, or low-income oil-importing countries) rather than individual countries, because construction of the group variables requires explicit accounting for all component-country changes within the group, and because the econometric analyses are made by another department (the Research Department) that acts as the clearing house for all material from the Area Departments.

A second related feature of the *World Economic Outlook* exercises is that the final projections emerge out of an iterative process that itself provides some safeguard against aggregation errors. (For an overview

of the iterative process with respect to the short-term projections in the *World Economic Outlook*, see Chart 2.) Perhaps the best example of this is the interaction between the so-called environmental assumptions and projections for developing countries. The environmental assumptions pertain to those features of the world economy that have the greatest impact on the developing countries, such as average growth of GDP among partner countries, prices of manufactured goods imported by developing countries, interest rates on commercial credits to developing countries, or the world

Chart 2. Interactions in the Elaboration of the Short-Term Projections of the *World Economic Outlook*



Note: Short-term projections encompass the period to the end of 1986.

¹ Mostly summations of weighted averages of individual country variables.

² The main variables screened by the staff for global inconsistencies are: the global balances on trade, investment income, other invisibles, and the current account; the world's terms of trade, net real exports, and oil balances; and the balance between the demand for and supply of developing country finance. Beyond these areas of accounting consistency, the staff also screens many areas for behavioral consistency, e.g., whether the relationship of imports to GDP is in line with the historical and/or econometric evidence.

price of oil. In some sense, these environmental assumptions can be thought of as the "exogenous" variables necessary to make projections for developing countries in either a regression equation or in the survey approach. But as the projection exercise continues, the environmental assumptions themselves need to be checked for consistency against the forecasts that they generate for developing countries. Suppose, for example, that each program country desk economist ignores other program country policy actions in making projections for exports and imports. Suppose, too, that the effect of this neglect is to make the country projections of both exports and imports too large, so that when they are aggregated, projected exports by all developing countries are inconsistent with the imports of industrial countries that correspond to the assumed real GNP in industrial countries. In that case, the initial forecasts will have to be scaled back to be consistent with the environmental assumptions.

Alternatively, the effects of programs could be adequately captured in the survey projections but underestimated in the environmental assumptions. Those assumptions will then have to be adjusted to ensure consistency with the projections for the individual countries. But so long as an adjustment for the global effects of programs is made for one of the country groups, and so long as the consistency of projections is checked across country groups, any error due to the omission of cross-country effects of programs should be uncovered.⁶⁷ By an analogous argument, it also follows that such an (iterative) consistency check of projections across country groups should bring to light cases where the policy stance in, say, the industrial countries is inconsistent with the overall objectives in Fund programs. For example, if the monetary, fiscal, and commercial policies followed by industrial countries implied a demand for imports that was considerably below the export forecasts specified in countries with Fund-supported programs, one would expect to find an inconsistency between the export projections in the survey approach and the import projections for the industrial countries from the econometric approach.

The third relevant feature of the *World Economic Outlook* exercises is the attention paid to the impact of alternative environmental assumptions on developing countries. This feature is characteristic of the medium-term scenarios. Assuming changes in either one environmental variable, or a combination, from their values in the "base scenario," can be quite

helpful for inferring, inter alia: (1) what changes in the global environment would be necessary to satisfy the types of external and internal objectives typically specified in program countries; and (2) how the prospects for different groups of non-oil developing countries (including, in principle, program countries) are likely to be affected in the medium term by alternative optimistic or pessimistic states of the world economy and by alternative degrees of effectiveness of their own policies. In brief, such scenario exercises provide some protection against the risk that judgments about the feasibility of the objectives of program countries would be too narrowly tied to one uncertain combination of policies and events in the world economy.

Information on Other Countries' Policies

The biannual *World Economic Outlook* exercise ensures that aggregation and interdependence effects of Fund-supported programs get some consideration by Fund staff at the time when projections are being debated and finalized. But what about recognition of interdependence and aggregation effects at the level of the Fund mission to an individual country? Here, at least three aspects of Fund operations should be explicitly noted.

First, Fund programs are set sequentially—not all at any given moment for the year to come.⁶⁸ Thus, when designing a program for country y, it is possible to recognize the consequences, direct and indirect, for y of an earlier program for country x. This recognition is assisted by the practice of circulating among Heads of Departments all back-to-office reports sent by mission chiefs to Management, and by the circulation for comment by other departments of all staff appraisals (including those from missions where use of Fund resources has been discussed or agreed). This means that Fund missions have recent information on earlier Fund missions and on earlier Fund-supported programs. Such country reports not only describe past policies but also provide some discussion of the authorities' policy intentions over the next year or so. All of this suggests that the design of Fund programs ought to be able to incorporate some estimate, albeit often rough, of how country y's program targets are likely to be affected by policies in its trading partners.

Second, as a useful by-product of the data collected and of the projections made for the *World Economic Outlook*, it is possible to provide each outgoing Fund

⁶⁷ However, the existence of the asymmetry in global current accounts makes the application of consistency checks across country groups more difficult, at least for balance of payments projections.

⁶⁸ As an example of this sequencing, the number of stand-by and extended arrangement missions from July 1983 to June 1984 can be classified by month as follows: July (21), August (19), September (8), October (14), November (25), December (17), January (17), February (20), March (12), April (15), May (24), and June (21).

mission with a table of summary indicators of foreign demand and prices for both partner and competitor countries. These indicators cover not only the current and the three previous years but also extend roughly a year and a half into the future. The weights used to average foreign developments are also "custom-made" for the particular country; both export and import weights are used to compute changes in a country's competitive position, and more than one measure is employed for both foreign demand and competitiveness. These indicators provide the mission with at least a crude assessment of how prospective developments in other countries may influence the feasibility of a potential Fund-supported program. For example, if adjustment efforts in partner countries with Fund programs entail some slowing of import growth in those countries, this should be reflected in the figures for import volumes of partner countries. Similarly, the approximate impact of multilateral exchange rate changes by other program countries on this country's competitiveness ought to be captured by the indicators for costs and prices in partner suppliers. This is not to say that such summary indicators can act as a substitute for a more comprehensive analysis of the interactions between a given program country and other program countries. Clearly, they cannot, nor has it been possible to revise these summary indicators as frequently as one might like for program negotiations. Nevertheless, they can be a useful ingredient in the analysis of interdependence.

More recently, yet a third mechanism for introducing information on the policies of other countries to Fund missions has been used: the assignment of a mission chief from a close trading partner to act as an additional member of a mission. Thus far, the experiment has been carried only for the major industrial countries where interdependence effects are strong and, perhaps most important, where the global effects of policy actions by the countries in question are likely to be most significant. In any case, one of the primary purposes of such a staffing procedure is to have first-hand information on other countries' policies in the design of Fund policy advice to a given country. One might also note that staff members in most Fund Area Departments typically go on missions to a number of countries in their region. Therefore, first-hand knowledge of policies in close trading partners is often available on Fund resource missions as a matter of course.

Waivers and Modifications in Fund-Supported Programs

No matter how careful the design of Fund-supported adjustment programs, it is almost inevitable that events

unforeseen at the time of inception of programs will occur during the program period. Given that Fund performance criteria are stated in explicit quantitative terms and that these criteria are usually set with a reasonable degree of tightness so as to monitor closely developments in the economy, it is to be expected that such unforeseen developments will sometimes produce departures from these performance criteria—and sometimes for reasons beyond the control of the country authorities. It is for this reason that provisions for waivers and modifications in Fund programs have evolved. In brief, the basic guidelines for these provisions can be summarized as follows:

...waivers were seen as appropriate for dealing with minor ex post deviations from performance criteria, that is, with deviations that did not represent departures from agreed policies and that were considered of a temporary or reversible nature; modifications would be appropriate when departures from performance criteria were expected to occur because of the failure of basic program assumptions to materialize or of the emergence of developments that had not been anticipated at the inception of the programs. However, when divergences were of a nature or magnitude so as to cast doubts on the program's viability, new understandings or further policy measures were to be reached, at times within the framework of the existing arrangement, but in cases of unusual severity, in the context of a new arrangement altogether.

These provisions for waivers and modifications in Fund programs have indeed been used. For example, in 1974–77, upper credit tranche arrangements with waived or modified performance criteria accounted for 26 percent of the total number of arrangements approved during that period, and the corresponding figure for 1978–80 was 57 percent. A review of experience for the 1981–84 period is not yet complete. The important implication of the waiver and modification provisions is that Fund-supported programs are not set in concrete.

Summary

The view that the policies of individual countries can generate serious "externalities" for other countries is central to the justification for an International Monetary Fund appraisal and indeed many of the Fund's activities involve the monitoring or "surveillance" of just such externalities. In this sense, the global effects of the policies of program countries, or interdependencies among program countries, are certainly no less a cause for concern than are the global effects of, or interdependencies among, policies of non-program countries. The main mechanism within the Fund for appraising the global effects of country policies, as

well as the consistency of policies across country groups, is the *World Economic Outlook*—the Fund-wide projections exercise. Because of the sequential nature of Fund programs and because of the distribution to outgoing missions of information on both previous Fund programs and foreign demand and price developments, it is also possible for program design to incorporate effects from other programs. In a similar vein, the provisions for waivers and modifications in Fund programs represent a well-established mechanism for dealing with departures from performance

criteria, including those attributable to unforeseen aggregation and interdependence effects. None of this, of course, means that aggregation and interdependence effects of Fund programs are fully and adequately accounted for in all individual programs. But it does suggest that if reference to the global or cross-country effects of Fund programs and policy advice is not found more often in Board papers on particular programs or consultations, it is because of the formidable difficulties of estimating of these effects rather than because of the failure to be cognizant of them.

VII Conclusions

This paper has made a comprehensive appraisal of the arguments surrounding, and the empirical evidence on, the global effects of Fund-supported adjustment programs. The paper's main findings can perhaps best be summarized as follows.

First, in assessing not only the size but even the direction of program effects, it is important to recognize that alternative definitions of program effects can yield markedly different results. The review of five alternative definitions found that measured program effects can vary substantially depending on seven different considerations: (1) whether changes in non-program factors (such as economic activity in the industrial countries, world interest rates and world oil prices, or weather conditions in program countries) between the pre-program and program period are taken into account; (2) whether program targets incorporate accurate forecasts of the global economic environment during the program period; (3) whether program countries are systematically different from non-program countries prior to the program period in ways that matter for subsequent performance; (4) whether non-program countries are themselves indirectly affected by Fund programs; (5) whether the medium- and long-run (beyond-one-year) effects of programs are considered in addition to the impact of short-run effects; (6) whether, because of confidence and credibility, the imposition of a given policy within the context of a Fund program has different effects than without it; and (7) whether the most relevant comparison for actual results under a Fund program is what would have happened in its absence or instead, what could have happened under some (hypothetical) optimal set of policies. All these suggest that one reason the evaluation of Fund-supported programs has produced such widely varying verdicts is that different judges have often applied different "yardsticks" to the same data.

The Fund's own interpretation of the measurement of program effects can perhaps best be summarized as follows: (1) actual outturns in program countries should be compared with what would have happened in these countries in the absence of Fund programs; (2) in forming a judgment about what would have

happened in the absence of programs, the Fund's direct and indirect catalytic role in providing additional finance to program countries must be considered; this means that any compression of expenditure and imports during the program period needs to be weighed against the (larger) expenditure and import changes that are likely to have occurred in the absence of this program-induced financing; (3) Fund-supported programs should be characterized by the full range of policy measures included in typical past programs and not just by government budget targets, domestic credit ceilings, and exchange rate changes alone; similarly, given the adverse initial position of most program countries and the failures of policy in the pre-program period, it should be recognized that credibility and confidence may produce a different result from a given policy package within the context of a Fund program than without it; and (4) the effects of Fund programs, particularly on growth, should be assessed in the medium- to long-term (certainly over more than a year) rather than in the short run; an excessively short-run framework will almost inevitably exclude any positive growth effects of supply-side and structural measures in programs, and will make it very difficult to distinguish between the adjustment to a sustainable internal and external position and that sustainable position itself.

In short, by comparing what is versus what would have been, by considering the influence of the availability of foreign exchange on import decisions in program countries, by accounting for the full range of policy changes in programs as well as for the contribution of programs to the credibility of those proposed policy changes, and by adopting a medium-term rather than a short-term true horizon, the Fund has come to a rather different assessment of program effects than some other observers. Since assessment of the domestic effects of Fund-supported programs is a logically prior input to the assessment of the global effects of programs, it follows that the Fund's appraisal of the size and even the sign of such global effects of programs also often differs from that of some others.

Third, to the extent that Fund-supported programs do lead to changes in expenditure, output, and import

volumes in program countries, one should expect these changes to induce changes in these same macroeconomic variables in the rest of the world, and in the same direction. After all, one should not expect cross-country expenditure multipliers to cease operating just because the initiating changes in expenditure or imports results from a Fund program. But perhaps the more telling point is that even with roughly 35 developing countries undertaking programs supported by the Fund, the size of these global trade and economic activity effects is likely to be relatively small. This is because: (1) program countries still account for rather small shares (7–8 percent) of world imports and of world exports; (2) relatively little (8–9 percent) of program countries' trade is with other program countries; and (3) the average size of the initiating changes in import volumes in program countries has been rather small (3–6 percent) over the past decade. Indeed, even when the "later-round" effects of changes in the imports of program countries are considered, and when marginal trade propensities replace average propensities—as revealed in simulation exercises with several global trade models—the global effects of expenditure changes in program countries remain limited. To take a specific example, results from both the OECD Interlink Model and the Project LINK World Trade Model suggest that even a 15 percent decline in the imports of (1983) program countries—a figure twice as large as that recorded by program countries in 1983 and almost three times as large as the average for 1973–82—would lead after a year to perhaps a 0.3–0.5 percent decline in real GNP in the OECD countries. In the end, all analyses of the global effects of programs must face the twin realities that expenditure changes in the North (i.e., in the industrial countries) have by far the greatest impact on global economic activity, and that domestic expenditure multipliers are typically much larger than cross-country ones. This means that, for better or for worse, the primary impact of Fund programs falls on the countries themselves, and that serious, or potentially serious, global effects will be the exception rather than the rule. None of this of course denies that the external effects of Fund-supported programs on individual countries, industries, firms, or perhaps even regions, can be serious. Further, if the program-country group were to become considerably larger in the future, the global effects of programs would certainly need to be reassessed.

Fourth, the concern that the simultaneous exchange rate depreciations by program countries could have serious and deleterious effects on prices of the exports of program countries is certainly a reasonable one in theory. Indeed, economic theory suggests that for a homogeneous primary commodity, the ability of program countries to affect the prices of their exports

depends (positively) on their ability to affect the world production or the world consumption of the good, and on the (absolute) value of their own price elasticities of supply and demand for the good. In practice, however, the risks of adverse aggregate effects on export prices are much reduced—for five reasons: (1) primary commodities now represent a much smaller share of the exports of non-oil developing countries than they did two decades ago; (2) non-oil developing countries now account for only about 30 percent of world exports of non-energy primary commodities; (3) supply-price elasticities for most primary commodities are rather low in the short run; (4) the share of program countries of world production of various primary commodities is much below the share for all developing countries; and (5) not all program countries change their exchange rates during the same period, and those that do will usually not export identical bundles of primary commodities. But a lower risk is not the same as no risk. There are some primary commodities (such as coffee, cocoa, natural rubber, or tin) for which world production is relatively highly concentrated in the top three or top five developing-country producers, and there are quite a few non-oil developing countries where exports are still highly concentrated in only a few primary commodities. In these countries with relatively high market power, aggregate price effects cannot be lightly dismissed. Also, "beggar-thy-neighbor" effects of exchange rate changes are not confined to primary commodities. For manufactured exports, simultaneous exchange rate depreciation by many producers can mean that each gets less of a gain in market share than expected, and that the devaluing group takes export volumes away from the passive group of manufacturing non-oil developing countries. For these reasons, the Fund needs to monitor closely the aggregation and interdependence effects of exchange rate changes by program countries. Equally important, the Fund needs to continue to urge the industrial countries to improve the access of developing countries to their large markets, for whatever the effectiveness of devaluation in increasing export supply, the amount of developing-country exports actually sold will be the minimum of the demand for and the supply of these goods.

Fifth and finally, the *raison d'être* of the Fund is precisely that the global, systemic, and third-country effects of the policies of individual countries do matter and that efforts must be made to ensure that countries with balance of payments problems seek solutions that are not destructive of the general welfare. Also, because the Fund is offering advice on economic policies to almost all countries in the system, it must be concerned about the aggregate effects of that advice, as well as with its consistency and feasibility across

countries. A number of procedures have therefore evolved in the Fund for the evaluation of such aggregation and interdependence effects. At the broadest level, these effects are analyzed by the staff and discussed by the Fund's Executive Board at least twice each year during the *World Economic Outlook* exercises. Program countries are of course included in that analysis and discussion, albeit as part of more structural country-classification groups (major exporters of manufactures, low-income countries, or 25 major borrowing countries) rather than as a separate entity. At the level of individual consultation missions and program negotiations, cross-country effects are analyzed

as part of normal mission preparation and of normal program design. The waivers and modifications provisions in Fund programs also represent a well-established mechanism for assessing, and if necessary, redressing the consequences of, inter alia, unforeseen interdependence effects. None of this means that the evaluation of the global effects of Fund-supported programs within the Fund staff itself is unerring. But it does suggest that serious efforts are being made to consider the repercussions of these Fund programs on other countries and on the operation of the world economy as a whole.

Selected Bibliography

- Anjaria, S.J., Z. Iqbal, N. Kirmani, and L.L. Perez, *Developments in International Trade Policy*, Occasional Paper No. 16 (Washington: International Monetary Fund, November 1982).
- Balassa, Bela, *The Process of Industrial Development and Alternative Development Strategies*, Essays in International Finance No. 141 (Princeton, New Jersey: Princeton University, December 1980).
- Bélanger, Gérard, "An Indicator of Effective Exchange Rates for Primary Producing Countries," *Staff Papers*, International Monetary Fund (Washington), Vol. 23 (March 1976), pp. 113–36.
- Bergsten, C. Fred and William R. Cline, "Trade Policy in the 1980s: An Overview," in *Trade Policy in the 1980s*, edited by William R. Cline (Washington: Institute for International Economics, 1983).
- Bond, M., "Agricultural Responses to Prices in Sub-Saharan African Countries" (unpublished, Washington: International Monetary Fund, 1983).
- Branson, W. and L.T. Katseli-Papaefstratiou, "Income Instability, Terms of Trade, and the Choice of Exchange Rate Regime," *Journal of Development Economics* (Amsterdam), Vol. 7 (March 1980), pp. 49–69.
- Brau, E., R.C. Williams, P.M. Keller, and M. Nowak, *Recent Multilateral Debt Restructurings with Official and Bank Creditors*, Occasional Paper No. 25 (Washington: International Monetary Fund, December 1983).
- Chu, K.Y. and T. Morrison, "The 1981–82 Recession and Non-Oil Primary Commodity Prices: An Econometric Analysis" (unpublished, Washington: International Monetary Fund, September 1983).
- Clark, P.B., "The Effects of Recent Exchange Rate Changes on the U.S. Trade Balance," in *The Effects of Exchange Rate Adjustments*, edited by P. Clark, D. Lagne, and R. Sweeney (Washington: U.S. Treasury, 1977), pp. 201–36.
- Cline, William R., et al., *Trade Negotiations in the Tokyo Round: A Quantitative Assessment* (Washington: The Brookings Institution, 1978).
- de Larosiére, J., *Does the Fund Impose Austerity?* (Washington: International Monetary Fund, June 1984).
- Dell, Sidney, *On Being Grandmotherly: The Evolution of IMF Conditionality*, Essays in International Finance No. 144 (Princeton, New Jersey: Princeton University, 1981).
- Deppler, Michael C. and Duncan M. Ripley, "The World Trade Model: Merchandise Trade," *Staff Papers*, International Monetary Fund (Washington), Vol. 25 (March 1978), pp. 147–206.
- Fair, R., "On Modelling the Economic Linkages Among Countries," in *International Economic Policy—Theory and Evidence*, edited by R. Dornbusch and J. Frenkel (Baltimore: Johns Hopkins University Press, 1979).
- Feltenstein, Andrew, Morris Goldstein, and Susan M. Schadler, "A Multilateral Exchange Rate Model for Primary Producing Countries," *Staff Papers*, International Monetary Fund (Washington), Vol. 26 (September 1979), pp. 543–82.
- Glowacki, J. and K. Ruffing, "Developing Countries in Project LINK," in *Modelling the International Transmission Process*, edited by J.A. Sawyer (Amsterdam: North-Holland Publishing Co., 1979).
- Goldstein, Morris and Mohsin S. Khan, "Income and Price Effects in Foreign Trade," in *Handbook of International Economics*, Vol. 2, edited by Ronald W. Jones and Peter B. Kenen (Amsterdam: North-Holland, 1984; New York: Elsevier, 1984), pp. 1041–1105.
- , *Effects of Slowdown in Industrial Countries on Growth in Non-Oil Developing Countries*, Occasional Paper No. 12 (Washington: International Monetary Fund, August 1982).
- Goldstein, Morris and Peter Montiel, "Evaluating the Effects of IMF Stabilization Programs: Some Methodological Pitfalls" (unpublished, Washington: International Monetary Fund, December 1985).
- Goreux, Louis M., *Compensatory Financing Facility*, IMF Pamphlet Series No. 34 (Washington: International Monetary Fund, 1980).
- Grossman, Gene M., "Import Competition from Developed and Developing Countries," *Review of Economics and Statistics* (Cambridge, Massachusetts), Vol. 64 (May 1982), pp. 271–81.
- Guitian, M., *Fund Conditionality: Evolution of Principles and Practices*, IMF Pamphlet Series No. 38 (Washington: International Monetary Fund, 1981).
- Havrylyshyn, Oli and Martin Wolf, *Trade Among Developing Countries: Theory, Policy Issues, and Principal Trends*, World Bank Staff Working Paper No. 479 (Washington, August 1981).
- Heckman, James J., "Sample Selection Bias as a Specification Error," *Econometrica*, Vol. 47 (January 1979), pp. 153–61.
- Helleiner, Gerald K., *The IMF and Africa in the 1980s*, Essays in International Finance No. 152 (Princeton, New Jersey: Princeton University, July 1983).
- Helliwell, J. and T. Padmore, "Empirical Studies of Macroeconomic Interdependence," in *Handbook of International Economics*, edited by Peter Kenen and

- R. Jones (Amsterdam: North-Holland Publishing Co., 1984).
- Hemphill, William L., "The Effect of Foreign Exchange Receipts on Imports of Less Developed Countries," *Staff Papers*, International Monetary Fund (Washington), Vol. 21 (November 1974), pp. 637-77.
- Hickman, Bert G. and V. Filatov, "A Decomposition of International Income Multipliers," in *Global Econometrics: Essays in Honor of Lawrence R. Klein*, edited by F. Gerard Adams and Bert G. Hickman (Cambridge, Massachusetts: MIT Press, 1983), pp. 340-67.
- Inter-American Development Bank, *Commodity Export Prospects of Latin America* (Washington: Inter-American Development Bank, March 1984).
- International Monetary Fund, *World Economic Outlook*, Occasional Paper No. 27 (Washington, 1984).
- Isard, Peter, "The Price Effects of Exchange Rate Change," in *The Effects of Exchange Rate Adjustments*, edited by P. Clark, et al. (Washington: U.S. Treasury, 1977).
- Khan, Mohsin, "Import and Export Demand in Developing Countries," *Staff Papers*, International Monetary Fund (Washington), Vol. 21 (November 1974), pp. 678-93.
- , and Malcolm D. Knight, "Stabilization in Developing Countries: A Formal Framework," *Staff Papers*, International Monetary Fund (Washington), Vol. 28 (March 1981), pp. 1-53.
- Killick, Tony, "IMF Stabilization Programs," in *The Quest for Economic Stabilization*, edited by Tony Killick (London: Heinemann for Overseas Development Institute, 1984), pp. 183-226.
- Kirmani, Naheed, Luigi Molajoni, and Thomas Mayer, "Effects of Increased Market Access on Exports of Developing Countries," *Staff Papers*, International Monetary Fund (Washington), Vol. 31 (December 1984), pp. 661-84.
- Larsen, F., J. Llewellyn, and S. Potter, "International Economic Linkages," *OECD Economic Studies*, No. 1 (Autumn 1983), pp. 44-92.
- Lewis, Harold Gregg, *Unionism and Relative Wages in the United States: An Empirical Inquiry* (Chicago: University of Chicago Press, 1963).
- Meltzer, Alan, "Notes on the Problem of International Debt" (unpublished, September 1983).
- Organization for Economic Cooperation and Development, *OECD Interlink System—Structure and Operation* (Paris: OECD, Autumn 1983).
- Please, Stanley, *The Hobbled Giant, Essays on the World Bank* (Boulder: Westview Press, 1984).
- Ridler, Duncan and Christopher A. Yandle, "A Simplified Method for Analyzing the Effect of Exchange Rate Changes on Exports of a Primary Commodity," *Staff Papers*, International Monetary Fund (Washington), Vol. 19 (November 1972), pp. 559-78.
- Saunders, A., "An Examination of the Contagion Effect in the International Loan Market" (unpublished; Washington: International Monetary Fund, December 1983).
- Waelbroeck, Jean, "Regional Models of Developing Countries," in *Models of Project LINK*, edited by Jean Waelbroeck (Amsterdam: North-Holland Publishing Co., 1976), pp. 397-409.
- Weinberg, C., "Comparisons of Policies to Stimulate the World Economy," in *Modelling the International Transmission Process*, edited by J.A. Sawyer (Amsterdam: North-Holland Publishing Co., 1979), pp. 129-41.
- Whalley, John, "The North-South Debate and the Terms of Trade: An Applied General Equilibrium Approach," *Review of Economics and Statistics* (Cambridge, Massachusetts), Vol. 66 (May 1984), pp. 224-34.
- Williams, Richard, Peter Keller, John Lipsky, and Donald Mathieson, *International Capital Markets: Developments and Prospects*, Occasional Paper No. 23 (Washington: International Monetary Fund, July 1983).
- Williamson, John, *The Lending Policies of the International Monetary Fund* (Washington: Institute for International Economics, 1982).
- , ed., *IMF Conditionality* (Washington: Institute for International Economics, 1983).
- Winters, L. Alan, "Developing Countries' Manufactured Exports—Some Simple Models" (unpublished, Washington: World Bank, December 1984).
- World Bank, *Price Prospects for Major Primary Commodities* (unpublished, Washington: World Bank, December 1982).
- , *World Development Report 1984* (New York: Oxford University Press, 1984).

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